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Contents

USER'S MANUAL FOR THE NATIONAL WATER INFORMATION SYSTEM OF THE U.S. GEOLOGICAL SURVEY

CHAPTER 2. WATER-QUALITY SYSTEM

Open-File Report 97-634

Version 3_1

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Abstract

The Water-Quality System is a water-quality data storage and retrieval system that is part of the National Water Information System developed by the U.S. Geological Survey's Water Resources Division. The National Water Information System is a distributed water data base in which data can be processed over a network of computers at U.S. Geological Survey offices throughout the United States. This system comprises the Automated DAta Processing System, the Ground-Water Site Inventory System, the Water-Quality System, and the Water-Use Data System.

The Water-Quality System provides for entering new sites, updating existing sites within the local data base, and updating the Environmental Protection Agency's Storage and Retrieval System. In addition, the Water-Quality System provides for retrieving and displaying water-quality data stored in the local data base. This manual contains instructions for users of the Water-Quality System and discusses the general operating procedures for the programs found within the system.

1 Introduction

Most of the data collection done by the USGS is through joint-funding agreements with cooperators consisting of State, regional, and local agencies. The data that are collected are stored in the National Water Information System (NWIS). The NWIS water-quality data-processing system, available for use on the AViiON workstations and file server, has been designed as an interactive system. The purpose of this user's manual is to serve as a reference guide and to aid the user in the use of the water-quality system programs. The programs are listed in section 8 and are discussed in sections 2-6. Section 7 discusses the alternate menus available There are six appendixes in this manual: A through F. These sections and appendixes are online as continuous parts of this document within a Frame-Maker book file. This manual supersedes Open-File Report 89-617.

Most of the available programs are "conversational" routines that interact with the user, accepting input from the terminal and displaying output on the screen. Some programs that generate large volumes of output write to disk files for later viewing or printing, and a

few programs accept input from files. Programs that read from or write to files request names from the user; a few pathnames are “hard coded” in the programs.

1.1. Water-Quality Data Bases, Files, and Records

NWIS provides for use of one or more logical water-quality data bases within one Ingres data base, all accessed using one copy of the NWIS software. One logical water-quality data base consists of a water-quality file (QWFILE), a station file (SITEFILE), and shared reference files. The QWFILE is a keyed-indexed file in Ingres tables managed by a UNIX-based software system. This system allows records to be retrieved efficiently on the basis of the values of selected data defined as KEY elements: agency code, site ID, begin date, begin time, end date, end time, and medium code. The SITEFILE is accessed to select water-quality records by SITEFILE data elements, such as site ID, site type, and location. Reference files, such as the parameter code file and the geologic-unit code file, are implemented as Ingres tables and are used for checking the validity of data-entry values.

Each water-quality record to be stored is initialized by “logging in” the data; this is typically done when field data are available. At login time, a record number (unique within each District office of the USGS processing system) is assigned to each analysis by the program; the record number may be used later to access the analysis for updating or viewing. Analyses may be logged in by personnel who have access rights for entering data.

1.2. Data Base Access

Access to multiple water-quality data bases is managed by the NWIS **gpath** utility programs. The **gpath** programs provide a pathname data base where each data-base file is associated with a generic file name and a data-base number. A data-base number is a 2-digit number, ranging from 01-98. (Data-base number 99 is reserved for use by NWIS maintenance programs and transaction archive files.) The **gpath** programs provide a data-base selection table (*/usr/opt/nwis/support/user.dbn.def*) where an individual user ID may be associated with a default data-base number.

The default location for QWFILE and SITEFILE is the */usr/opt/nwis/data/midas/db01* directory. If a single water-quality data base is used at an NWIS installation and the data base is in the default files and directory, no entries in the **gpath** files are required. If no water-quality data base information is located in the **gpath** files, the NWIS programs will attempt to open QWFILE and SITEFILE in the */usr/opt/nwis/data/midas/db01* directory.

Regardless of how many data bases are implemented on each system, any user who has not been assigned an alternate data-base number in the data-base selection table will be associated with data-base number 01. Additional information and instructions for implementing and using multiple data bases are in the Database Administrator’s Manual, available on the Web at */usr/opt/nwis/doc/index.doc*.

1.3. Command-Line Execution of Programs

Any of the water-quality data-processing programs, discussed in sections 2-5, may be invoked directly by typing in the program name in the following command line format:

program.pathname -d nn

where (1) "program.pathname" is the program the user wants to run; (2) "-d" (also "-D") indicates a temporary data-base selection is intended, and (3) "nn" is the 2-digit data-base number that identifies the data base selected for use by the program invoked.

Note: Full pathnames are required within any NWIS program if you wish to specify a directory other than the one you are attached to when the NWIS program was initiated.

The programs corresponding to major sections (2-5 and 7) are all UNIX shell scripts (**qwdata**, **qwlabs**, **qwsystem**, and **qwgraph**). The programs used in sections 3.1 (**qwgetlab**) and 4.3 (**qwstoret**) are also UNIX shell scripts. The pathname for the programs in section 2.2.5 (Update Site File) is:

/usr/opt/nwis/util/stnup

and the pathname for the program in section 4.5 (**stnchange**) is:

/usr/opt/nwis/util/stnchange.

The pathname for the program that produces Piper diagrams, section 5.4 (**qwpiper**), is:

/usr/opt/nwis/bin/qwpiper.

1.4. Acceptable Interactive Responses

When YES/NO questions are asked throughout the programs, an answer of "Y", "y", "YES", "yes", "N", "n", "NO", "no", or a blank is required; any other answer should receive an error prompt and a repeat of the question. An answer of blank (or carriage return) will default to "yes". Similarly, where the user may answer a prompt with "QUIT"; "Q", "q", or "quit" also will be accepted. Several programs request a numeric response to select an option (1, 2, or 3). When numeric data are requested, it is not necessary to enter final decimal points; however, imbedded decimal points must be entered.

Note: A carriage return is sometimes referred to as "<cr>", during explanation of a program.

Many of the interactive programs use cursor-control routines to display forms on the terminal screen for ease of data entry. These forms routines function as follows:

- A. Entry of input values must be terminated with a <cr>. This allows time to evaluate the entry and, if necessary, backspace and reenter before entering the <cr>. The <cr> causes the cursor to move to the beginning of the next field.
- B. Any default values displayed on the input forms may be accepted by entering a <cr>.
- C. If an invalid entry or a question mark (?) is entered for a field, the programs will display a list of valid codes and their meanings and then reposition the cursor to the beginning of the field.
- D. The format for entering dates is year (4 digits), month (2 digits), and day (2 digits); this format (YYYYMMDD) is displayed instead of spaces on the input forms.
- E. If data are unavailable for a nonmandatory field, the field may be skipped by entering a <cr>.

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2 Interactive Programs for Data Entry and Retrieval

-- System Command **qwdata**

The programs in the **qwdata** general-purpose data entry and retrieval system may be invoked by typing the program name on the command line or by selecting them from a menu displayed at the terminal. An alternate menu for this system (**qwmenu**) is described in section 7.1. To display the **qwdata** menu, type:

qwdata

on the command line. In response to this command, the menu shown in figure 1 is displayed. *Note:* [version no.] is the current released version of the software.

```
QW DATA PROCESSING ROUTINE REV NWIS[version no.+YYYYMMDD]
YOU ARE USING WATER-QUALITY DATA BASE NUMBER 01

QW SYSTEM OPTIONS

1 -- LOGIN SAMPLES           4 -- CHECK SUPPORT FILES, including
                                List Sites, Access Parameter
                                Code Dictionary, Access Geologic
                                Unit Code and State/County files

2 -- ADD / CHANGE / DELETE   95 -- WATER QUALITY UTILITIES OPTIONS
      Enter field or
      miscellaneous data,
      Edit or flag samples,
      Count QW records, or
      Update Site File.

3 -- RETRIEVE SAMPLES       99 -- EXIT TO SYSTEM
      Check entry or make
      loglist, Locate samples,
      Provide cation/anion
      balance, Make tables or
      PSTAT data set.

Please enter a number from the above list or a UNIX command:
```

Figure 1. Data Entry/Retrieval menu

While in the UNIX shell script, UNIX commands, such as **more** or **ls** can be entered to look at file names or list a file. At the conclusion of each selected program, the above menu is redisplayed until **99--EXIT TO SYSTEM** is selected. The options for the functions are described in the following pages.

The screen displays the current data-base number of the QWFILE. This is the file from which data will be edited or retrieved.

2.1 Function 1 -- Login Samples

(/usr/opt/nwis/bin/qwlogin)

Function 1 of the main menu, **qwlogin**, invokes the login analysis routine. The program clears the terminal screen and displays the following form for entry of all the analysis heading information:

```
(1) AGENCY CODE: USGS_ (2) STATION NUMBER: _____
(3) BEGIN DATE: YYYYMMDD (4) BEGIN TIME: HHMM
(5) END DATE: YYYYMMDD (6) END TIME: HHMM (7) MEDIUM CODE: _
(8) HYDROLOGIC CONDITIONS: 9 (9) SAMPLE TYPE: 9 (10) HYDROLOGIC EVENT: 9
(11) PROJECT NUMBER: _____ (12) ANALYSIS TYPES: _____
(13) GEOLOGIC UNIT CODE: _____ (14) DATA CATEGORY: QW
(15) COLLECTING AGENCY (00027): _1028 (16) ANALYZING AGENCY(00028) _1028
(17) REMARKS: _____
(18) ANALYSIS STATUS: H(19) ANALYSIS SOURCE: 9 (20) LAB NUMBER: _____
```

HIGHLIGHTED AREAS ARE MANDATORY FIELDS.

The cursor is then positioned at the U in USGS. If this agency code is correct (the usual case), it is accepted by entering a <cr>; if not, any valid agency code (for example, USEPA) may be entered followed by a <cr>. The cursor is then positioned to the first blank following STATION NUMBER: and the program waits for input. Enter the station number, followed by a <cr>. Now the program checks the Site File to see if it contains an entry for the given station identification (agency code and station number). If an entry is found, the station name is displayed and the cursor is moved to the next input field. If no entry is found in the Site File, an error message is displayed and the cursor returns to the first blank following AGENCY CODE. (In this situation, you may exit the program by entering "quit" in the station number field.) A valid entry in the Site File is mandatory for entry of water-quality data.

When a station number has been accepted, the cursor is moved to the first Y following BEGIN DATE:. The begin date is a mandatory entry and must be in the correct format. The date is checked for validity, including being less than or equal to the current system date (future dates are invalid). If the begin date is more than 1 year prior to the current system date, a message is displayed and you are given the opportunity to reenter the date.

Note: For composites, the full end date (year, month, and day) must be entered. Unlike the former Water Data Storage and Retrieval System (WATSTORE), there are no restrictions on composites that span the end of the month. The only checks made on end date are to ensure that it is 1) a valid date, and 2) not earlier than the begin date. (If a composite spans more than 30 days, a warning message is written and you are given the opportunity to change the end date.) Begin and/or end times may be omitted; if times are entered, they are checked for validity.

The next three items (BEGIN TIME, END DATE, and END TIME) are optional; the items may be omitted by entering carriage returns. MEDIUM CODE is a mandatory entry; it is checked against the following list of valid medium codes, which may not match the screen display:

Medium Code	Description
0	Not determined
A	Artificial
B	Solids (street sweepings, and so forth)
C	Animal tissue
D	Plant tissue
E	Core material
F	Interstitial water
G	Soil
H	Bottom material
J	Sludge
K	Soil moisture
L-P	Taxonomic data <ul style="list-style-type: none"> (L) Phytoplanktonic species quantitative (M) Phytoplanktonic qualitative (N) Periphytic (O) Benthic invertebrates (P) Periphytic diatoms
Q	QA sample -- Artificial
R	QA sample -- Surface water
S	QA sample -- Ground water
T	QA sample -- Wet deposition
U	QA sample -- Bulk deposition
V	QA sample -- Suspended sediment
W	QA sample -- Bottom material
X	QA sample -- Animal tissue
Y	QA sample -- Plant tissue
Z	QA sample -- Interstitial water
1	Suspended sediment
2	Leachate
3	Dry deposition
4	Landfill effluent
5	Elutriation
6	Ground water
7	Wet deposition
8	Bulk deposition
9	Surface water

If the medium code entry is omitted, invalid, or consists of "?", a list of valid medium codes is displayed and the cursor is repositioned to accept the entry.

For each of the next three items (8, 9, and 10), an entry of a <cr> results in the default values shown on the form (9 -- Stable, normal stage, 9 -- Regular, and 9 -- Routine Sample).

Note: If the medium code entered is "6 -- Ground Water," HYDROLOGIC CONDITIONS and HYDROLOGIC EVENT are skipped and the default values of "9 -- Not Determined" and "A -- Routine Sample" are entered into the record. On the rare occasions when some other value is desired, the items can be changed before the record is stored in the Water-Quality File, as explained subsequently. An invalid code or an entry of "?" for any of these three items displays a list of valid codes. The following codes may not match the screen displays.

Hydrologic Condition Code

	Description
A	Not determined
4	Stable, low stage
5	Falling stage
6	Stable, high stage
7	Peak stage
8	Rising stage
9	Stable, normal stage

Sample Type Code

	Description
A	Not determined
H	Composite (time)
1	Spike
2	Blank
3	Reference
4	Blind
5	Duplicate
6	Reference material
7	Replicate
8	Spike solution
9	Regular
B	Other QA

Hydrologic Event Code

	Description
A	Spring breakup
B	Under ice cover
C	Glacial lake outbreak
D	Mudflow
E	Tidal action
H	Dambreak
J	Storm
1	Drought
2	Spill
3	Regulated flow
4	Snowmelt
5	Earthquake
6	Hurricane
7	Flood
8	Volcanic action
9	Routine sample

The PROJECT NUMBER and ANALYSIS TYPES items are optional and may be omitted by entry of a <cr>; an entry of "?", followed by a <cr> for ANALYSIS TYPES, displays a list of valid types. The following list of valid types may not match the screen display:

Analysis Types	Description
CH	Chemical
BI	Biological
SE	Sediment
NU	Nutrients
PE	Pesticides
BE	Bed Material
ME	Metals
RA	Radiochemical

Enter with no intervening blanks.

Zero to eight of the above-mentioned analysis-type codes may be entered. To enter, type in approved analysis types with no intervening blanks. If the medium code is not "6 -- Ground Water" the GEOLOGIC UNIT CODE item is skipped. For ground-water samples, however, the Site File entry is searched for a geologic unit code. If a value is found, it is displayed on the form; it may be replaced with some other value or may be accepted by entering a <cr>. The DATA CATEGORY item is an extension of the file system that may be implemented later; for now, the displayed value "QW" should be accepted by entering a <cr>. Following the <cr>, the program searches the file to ensure that the analysis information is unique. If a record with the same combination of Agency Code, Station Number, Medium Code, Dates, and Data Category is found, the entry is rejected with an error message and the record number of the duplicate record is displayed.

The Water-Quality File has a requirement of unique secondary key 7 values (the combination of fields given previously) in order to allow analysis updating to be done correctly. If duplicate secondary keys were allowed, there would be no way to distinguish between a new record and an update to an existing record. A maximum of 500 parameters can be stored in a single QW file record.

If the analysis information is acceptable, the cursor is positioned to the "_" preceding the 1028 for parameter code 00027, COLLECTING AGENCY. The default value, 1028, may be accepted or a new value entered and accepted by a <cr>. The cursor is then positioned to the "_" preceding the 1028 for parameter code 00028, ANALYZING AGENCY. Again the default value, 1028, may be accepted or a new value entered and accepted by a <cr>. Other acceptable fixed values for COLLECTING and ANALYZING agency codes are listed in Appendix B.

The cursor is then positioned to the REMARKS item; up to 50 characters of information may be stored in this item. After you enter a <cr> to end the remarks field entry, the cursor is positioned to accept a value for ANALYSIS STATUS. A "?" causes a display of valid

analysis status codes. A <cr> with no entry causes the default value "H -- initial entry" to be accepted for that field and the cursor is positioned to ANALYSIS SOURCE. A "?" causes a display of valid analysis source codes; a <cr> causes the default value "A - - not determined" to be accepted. The following valid codes for ANALYSIS STATUS and ANALYSIS SOURCE may not match the screen display:

Analysis Status Code**Description**

A	Not determined
H	Initial entry
1	Retrieved, in review
3	Data in temporary hold status
7	Reviewed, approved for transfer to EPA STORET
9	Proprietary data (Regional Hydrologist approval required)

Analysis Source Code

A	Not determined
B	Non-USGS field only
C	Non-USGS lab only
D	Non-USGS lab and field
F	USGS field and non-USGS field
G	USGS field and non-USGS lab
H	USGS field and non-USGS lab and field
1	USGS lab and non-USGS field
2	USGS lab and non-USGS lab
3	USGS lab and non-USGS lab and field
4	USGS lab and field and non-USGS field
5	USGS lab and field and non-USGS lab
6	USGS lab and field and non-USGS lab and field
7	USGS field only
8	USGS lab only
9	USGS lab and field

The last input item on the form is LAB NUMBER; this is the lab identification number, which is established by the Central Laboratory after the analysis is received by that office. Normally, you will not know this value at District login time and it should be left blank by entering a <cr>. If a value is entered at District login time, then that value will not be updated by subsequent lab-data input programs.

When values for all 20 items on the input form have been entered or accepted, you may edit the values by responding to the following prompt:

TO CHANGE ITEMS ABOVE, PLEASE ENTER ITEM NUMBER
(99 TO CONTINUE) :

If a valid item number (1-20) is entered, the cursor is positioned to the appropriate position on the form. Changes are subject to the same edit criteria as on initial entry. After each change, the prompt is redisplayed until a value of 99 (to end the editing process) is entered.

The program next asks if you want to enter field data for the analysis. If YES, the field-data entry routine described later in section 2.2.1 is invoked; otherwise that step is

skipped. The record is stored, the assigned record number is displayed, and you are asked if another analysis is to be entered. A NO ends the program. A YES produces the following prompt:

DO YOU WISH TO EDIT THE SAME HEADER?

A YES causes the previous analysis information to be redisplayed on the input form, followed by prompts for the item numbers you wish to change. This option allows the rapid login (data entry) of analyses with mostly repetitious information (analyses at one site that differ only by time, such as vertical measurements in a lake). A NO causes a new input form to be displayed (without the previously entered values). The dialog proceeds as before, with the cursor positioned at the U in USGS of the AGENCY CODE.

2.2 Function 2 -- Add/Change/Delete Samples

Function 2 of the main menu invokes the following submenu:

```

QW DATA PROCESSING ROUTINE      REV NWIS[version no.+YYYYMMDD]
YOU ARE USING WATER-QUALITY DATA BASE NUMBER (data base currently
being used)

ADD / CHANGE / DELETE DATA OPTIONS

1 -- ENTER FIELD DATA
2 -- ENTER MISCELLANEOUS DATA
3 -- EDIT SAMPLE RECORDS INCLUDING
   Modifying QW record header and data, or Deleting QW records.
4 -- FLAG APPROVED SAMPLES
5 -- UPDATE SITE FILE
6 -- COUNT QW RECORDS
98 -- EXIT TO MAIN MENU
99 -- EXIT TO SYSTEM

Please enter a number from the above list or a UNIX command:

```

Figure 2. Data Options submenu

2.2.1 Option 1 -- Enter Field Data

(/usr/opt/nwis/bin/qwfield)

Option 1, **qwfield**, is used to enter up to 40 parameters of field data. This program first asks for the number of the field form to be used. The field form is a list of parameter codes and their associated names which must be in a file named */usr/opt/nwis/support/field.parmsnn*, where "nn" represents the 2-digit form number. The contents of these files can be tailored to match your District field sheet. Fixed values for certain parameters are listed in Appendix B. Twenty-six parameter codes (99900-99925) have been established for District use and the usage is described later in section 2.2.3. Any resident editor that produces an ASCII output file may be used to create or edit the file. The input file will be used to create a screen form for data entry. The format of each record follows:

- Columns 1-5 Parameter code (5 digits, use leading zeros).
- Columns 6-30 Name to display for this parameter (should match District field sheet name to simplify entry).
- Column 31 Precision code to use for this parameter or blank (if this column is blank, precision code defaults to code from the Parameter Code Dictionary).
- Column 32 Flag indicating that parameter is valid for ground-water sites.
- Column 33 Flag indicating that parameter is valid for surface-water sites.
- Column 34 Flag indicating whether a remark code should be requested for this parameter.

Column 35 Method code to use for this parameter or blank (if this column is blank, method code defaults to blank). Valid method codes are listed in Appendix C.

Column 36 Y indicates parameter is mandatory.

After the field form (file) is located and read, you are asked if analyses are to be identified by (1) record number or by (2) station number, date(s), time(s), medium code, and agency code:

```
DO YOU WANT TO IDENTIFY RECORDS BY
 1 -- RECORD NUMBER
 2 -- AGENCY CODE, STATION NUMBER, DATE, TIME AND MEDIUM
 PLEASE ENTER 1 OR 2
```

This query is omitted when the program is entered from **qwlogin** (sec. 2.1), because data for the current record are used.

If (1) record number is selected, another query is displayed for determining the precision code.

```
SHOULD PRECISION CODE BE DETERMINED BY
 1 -- PARAMETER CODE DICTIONARY (PCD)
 2 -- VALUE AS ENTERED BY USER
```

If “value as entered by user” is selected, the precision code will be determined by the precision actually entered and the following line appears at the bottom of the screen where the parameter values are displayed/entered:

Note: Precision code will be set to precision of value as entered by user.

If identification is to be by agency code, station number, date, time, and medium code, a form is displayed for entry of station number, begin date, begin time, end date, end time, medium code, data category, and agency code, (station number, begin date, medium code, and agency code are necessary to uniquely identify a specific record). If identification is to be by record number, the above items for the retrieved record are displayed. With either method of identification, the station name is also displayed and you are asked to verify that this is the desired record. If the record does not exist (usually a typing error), you are notified and asked to identify another analysis. If you enter QUIT in place of a station number or record number, the program ends.

The program then displays a form showing the parameter codes and names from the requested field form (file), with spaces for the entry of values, and positions the cursor at the initial space of the first value. If the sample already contains data for any of the specified parameters, the stored value is displayed in the appropriate space, and the cursor is moved to the first field that contains no data. If all fields are occupied, the program skips

to the edit section described subsequently. Enter the value and the program then prompts for a remark code, if appropriate. Valid remark codes are as follows:

Remark Code	Description
Blank	Not remarked.
0,E	Estimated value.
1,<	Actual value is known to be less than the value shown.
2,>	Actual value is known to be greater than the value shown.
3,M	Presence of material verified but not quantified.
4,N	Presumptive evidence of presence of material.
U,ND	Material specifically analyzed for but not detected.
B,K	Results based on colony count outside the acceptable range (non-ideal colony count).
A	Mean value.
V	Analyte was detected in both the environmental sample and the associated blanks (see Office of Water Quality Technical Memorandum 97.08).
S	Most probable value.
L	Biological organism count less than 0.5 percent (may be only observed).
D	Biological organism count equal to or greater than 15 percent (dominant).
&	Biological organism estimated as dominant.
#	Delete the remark.
X	Delete the parameter on the Reston update.

A <cr> with no data is interpreted as a null-value, and that parameter is not stored. For values in which no decimal point has been entered, a decimal point is assumed at the end of the value; an imbedded decimal point must be entered. The quality-assurance code for parameters is set to I (USGS field value, in review).

When data for each parameter have been entered, the program provides an opportunity to modify the data by displaying the following prompt:

PLEASE ENTER PARAMETER CODE TO CHANGE OR ADD (99 TO END) :

and continues with this dialog until the prompt is answered with "99". If a value exists for the parameter code entered, a <cr> retains the old value; entry of a new value replaces the old one; and an entry of "D" causes the parameter to be deleted from the record. Deleted parameters are written to the file QWUP.CURnn (nn is the appropriate data base number) in the directory */usr/opt/nwis/data/watsave* for use in updating the national data base on the Amdahl in Reston.

Additional parameters may be added to the analysis without having to add them to the *field.parmsnn* file by entering the parameter code. The parameter appears at the bottom of the list and the cursor is positioned to accept a value. Once the value is entered, a message to enter a remark is displayed. If there is no remark code, a <cr> displays the above-mentioned prompt.

As each value is entered, the following checks are made:

- If the value is negative, the parameter code is checked against a list of codes for which negative values are permitted; if the entry is invalid, a message is displayed and the value is rejected.
- If the value is for a parameter that can contain fixed values, the fixed values file list is checked; if the value is invalid for that parameter, a message is displayed and the value is rejected.
- If the value for pH (parameter code 00400) is greater than 14, a message is displayed and the value is rejected. If the value for pH is outside the range of 4.5 to 9.0, a message will be displayed during data entry, but the value will be retained.

When data entry is complete, the record is stored and the dialog restarted with the request for record identification or **quit** to end.

The edit-validation module of **qwfield** has been removed, in efforts to speed update operations. Users will need to run **qvalid** (Option 7) to validate updates.

2.2.2 Option 2 -- Enter Miscellaneous Data

(/usr/opt/nwis/bin/qwinput)

Option 2, the **qwinput** program, is used to add up to 40 parameters of data from cooperator labs or District labs. (Separate programs are used for adding analytical data from the USGS Central Lab, see secs. 4.1 and 4.2). This program first asks if the records are to be identified by record number or by agency code, station number, date, time, and medium code. Next, the program asks for the name of the input file that contains the parameter list; the input file must be in the directory you are working in or the full pathname must be specified. The contents of these files can be tailored to meet the needs of the District office. Twenty-six parameter codes (99900-99925) have been established for District use and the usage is described later in section 2.2.3. Any editor that produces an ASCII output file may be used to create or edit the file. The input file will be used to create a screen form for data entry. The format of the records in the file follows:

Record 1

Column 1 The analysis-source code for these data (Appendix A, Table 20).

Records 2-n

Columns 1-5 Parameter code (5 digits, use leading zeros).

Columns 6-30 Name to display for this parameter (should match lab sheet name to simplify entry).

Column 31 Precision code to use for this parameter or blank (if this column is blank, precision code defaults to code from Parameter Code Dictionary).

Column 32 Quality-assurance code to use for this parameter or blank (if this column is blank, quality assurance code defaults to A--not reported).

Record 1

Column 33	Flag indicating whether a remark code should be requested for this parameter. (If not R, no remark code is requested..)
Columns 34-38	Constant value to be assigned to this parameter (such as pcode 00027); no value is solicited for this parameter.
Column 39	Method code (optional). Valid method codes are listed in Appendix C.
Column 40	Y indicates parameter is mandatory.

The file that contains the parameter list is located and read. The remainder of the program dialog is identical to that of the field-data entry program. Valid precision, quality-assurance, and remark codes are listed in Appendix A; fixed-value codes are listed in Appendix B, and method codes are listed in Appendix C. The quality-assurance codes are repeated here for convenience:

Quality Assurance Code	Description
A	Not reported.
B	Non-USGS lab value--failed edit.
C	Non-USGS field value--failed edit.
D	USGS lab value--failed edit.
E	USGS field value--failed edit.
F	Non-USGS lab value--in review.
G	Non-USGS field value--in review.
H	USGS lab value--in review.
I	USGS field value--in review.
1	Non-USGS lab value--approved for transfer to EPA STORET.
2	Non-USGS field value--approved for transfer to EPA STORET.
3	USGS lab value--approved for transfer to EPA STORET.
4	USGS field value--approved for transfer to EPA STORET.
6	Non-USGS lab value -- proprietary
7	Non-USGS field value -- proprietary
8	USGS lab value -- proprietary
9	USGS field value -- proprietary

The edit-validation module of **qwinput** has been removed, in efforts to speed update operations. Users will need to run **qwvalid** (Option 7) to validate updates.

2.2.3 Option 3 -- Edit Sample Records

(/usr/opt/nwis/bin/qwedit)

Option 3, the **qwedit** program, invokes an edit routine used to modify record information, delete records, or add, change, and delete parameter values. Like the field entry and miscellaneous entry programs, the edit routine gives the choice of selecting records by record number or by station number, date, time, medium code, and agency code; displays the record-identification information; and asks you to verify that this is the desired record.

When a record has been retrieved, the edit program offers four options:

```
EDIT OPTIONS:
1 -- SELECT ANOTHER RECORD
2 -- MODIFY THE RECORD HEADER
3 -- MODIFY THE ANALYTICAL DATA
4 -- DELETE THE RECORD

PLEASE ENTER 1,2,3,4
```

Twenty-six parameter codes (99900-99925) have been established in the Parameter Code Dictionary for use by individual Districts. The first five codes (99900-99904) have precision code defaults of 2, and the rest (99905-99925) have precision code defaults of 3. Their use is for storing District values for constituents who do not have a valid parameter code. Once stored, the values can be tabled and graphed, and statistics can be run.

Precision Codes

The precision code is used by the output routines to round the constituent value and display the proper number of significant figures and decimal places. The following examples illustrate how the precision code is used by the software.

For values one or greater, the precision code specifies the number of significant digits that should be reported. For example:

<u>Value</u>	<u>Precision Code</u>	<u>Displayed in Table</u>
1.562	4	1.562
1.562	3	1.56
1.562	2	1.6
1.562	1	2
156.2	4	156.2
156.2	3	156
156.2	2	160
156.2	1	200
10.	4	10.00
10.	3	10.0
10.	2	10
10.	1	10

Note that output will be padded with zeros to get to the number of significant figures specified by the precision code.

For values less than one, the precision code specifies the number of decimal places to be displayed. For example:

Stored in Data Base

<u>Value</u>	<u>Precision Code</u>	<u>Displayed in Table</u>
0.1562	4	0.1562
0.1562	3	0.156
0.1562	2	0.16
0.1562	1	0.2
0.0015	4	0.0015
0.0015	3	0.002
0.0015	2	0.00
0.0015	1	0.0

Default precision codes from the parameter code dictionary will be added for values that are entered into the data base with no precision code specified. For each parameter code in the parameter code dictionary, the default precision code is stored for a range of expected values. Section 2.4.7 describes how output from the parameter code dictionary that contains the default precision codes may be obtained.

To correct existing precision codes in field values--

qwfix is a command-line program used to correct existing precision codes in field values. To run the program, type “qwfix” on the command line. You are prompted for three items:

1. file name of input (1-* cards format) file
2. list of parameters to check (special format--examples are shown below)
3. name of output file

An example of the program dialog follows:

```
~/test/qwfix$ qwfix
FOR INPUT FILE OF QW CARDS,
ENTER INPUT FILE (Terminal=*)? qwcards

FOR LIST OF PARAMETERS TO MODIFY,
ENTER INPUT FILE (Terminal=*)? list.field

FOR OUTPUT FILE OF QW CARDS,
ENTER OUTPUT FILE (Terminal=*)? out

Here is an example parameter file (list.field):
00095 3333321.000
00400 0000032.100
```

Only changes to the input data will be written to the output file. Use the **qwcardsin** program to then enter the corrected data into NWIS.

If the values need tabling, the heading is a seven-character matrix with seven characters per line and seven lines allowed. The heading may then be modified with an editor to accurately describe the constituent. Following is an example table from the data base.

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

				9990001	9990401	9990501
		SPE-		9990002	9990402	9990502
		CIFIC		9990003	9990403	9990503
		TEMPER-	CON-	9990004	9990404	9990504
		ATURE	DUCT-	9990005	9990405	9990505
DATE	TIME	WATER	ANCE	9990006	9990406	9990506
		(DEG C)	(US/CM	9990007	9990407	9990507
		(00010)	(00095)	(99900)	(99904)	(99905)

MAR

16...	0700	15.5	295	11	<10	86.0
-------	------	------	-----	----	-----	------

The remaining dialog depends on the option selected. If you want to modify the header information, the items that can be changed are displayed with numbers and you are asked to select a number to be modified. The cursor is positioned to the appropriate value. After each change, the program asks if more changes are to be made; if so, the current values are redisplayed and the dialog is repeated. A # sign may be used to delete (blank out) a geologic unit code in the header information. If an invalid geologic unit code is entered, the following message is displayed:

INVALID GEOLOGIC UNIT CODE _____ RE-ENTER -- C TO SKIP

When no further changes are requested, a 99 ends the updating procedure and, the record is updated in the file. You are asked to enter another record number (if selecting by record number) or to enter a new station number, date, time, medium code, and agency code. A **quit** terminates the program.

If you want to modify the analytical data, the parameter codes currently stored for the record are displayed with their associated values and parameter-level codes. You are prompted to enter the parameter code to be changed.

Note: A limited number of values can be displayed on a single screen. If the record contains more values than can be accommodated on a screen, enter D (display) to get the next available screen of data; this dialog continues until all parameters in the record have been displayed. If you enter a parameter that exists in the record but is not displayed on the current screen, the program displays the appropriate screen; reenter the parameter code to edit. Fixed values for certain parameters are listed in Appendix B.

If the parameter requested to be changed is in the record, the cursor is positioned at the beginning of its value and a new value is accepted from the screen. If the character D (or

d) is entered for the value, the parameter, its value, and the associated parameter-level codes are deleted from the record.

Note: The cursor, when accepting an entry, moves to each of the four parameter-level codes (REMARK, QUALITY-ASSURANCE, METHOD, and PRECISION). Valid parameter-level codes are listed in Appendix A. An entry for quality-assurance code is *mandatory*; if omitted, a default value of "A -- not reported" is accepted. Valid method codes are listed in Appendix C. A # sign may be used to blank the remark code and/or the method code. Deleted parameters are written to the file *qwup.curnn* (nn is the appropriate data base number) in the directory */usr/opt/nwis/data/watsave* for use in updating the Environmental Protection Agency's STORET File.

If the requested parameter is not present in the record, the parameter code is displayed at the end of the list and the cursor is positioned to accept a value. After each change, you are asked if more changes are to be made to this record; when no more changes are requested, a **quit** is entered and the record is updated in the file. You are asked to enter another record number (if selecting by record number) or to enter a new station number, date, time, medium code, and agency code. A **quit** terminates the program.

If you want to delete the record, the program double-checks by asking if you really want to delete it; an answer of YES (full word, upper case) is required before the deletion will be made. An alternative for deleting a record is to place the word DELETE in the GEO-LOGIC UNIT CODE field (cols. 36-43) on a 1-card. This is explained in section 4.2 (**qw_enter**).

Note: Many users may be aware that in the former WATSTORE QW file on the Amdahl in Reston, a deleted record or parameter value was only "flagged" for deletion; it was not physically removed from the file until a later time. The deleted records or values could be recovered by removing the delete flag. That functionality was based on IBM Operating System software and is not a part of the NWIS Water-Quality data-processing system. In NWIS, deleted records or values are removed from the file immediately and cannot be recovered except by reentering.

The edit-validation module of **qwedit** has been removed, in efforts to speed update operations. Users will need to run **qwvalid** (Option 7) to validate updates.

2.2.4 Option 4 -- Flag-Approved Samples

(/usr/opt/nwis/bin/qwflag)

Option 4, the **qwflag** program, is used by the person(s) responsible for water-quality data management to set flags (District Processing Status) on the status of data. Upon data input, the flag is automatically set to indicate that the analysis is complete and has been APPROVED -- READY TO TRANSFER to EPA's STORET File. Optionally, analyses of local interest only may be flagged as COMPLETE, BUT DO NOT TRANSMIT. When selecting option 4, the following submenu and options are displayed:

```
THIS PROGRAM SETS THE RECORD STATUS FLAG
```

```
DO YOU WANT TO FLAG RECORDS AS:
```

- 1 -- (R) READY TO TRANSMIT
- 2 -- (Z) COMPLETE, BUT DO NOT TRANSMIT
- 3 -- (N) NEW RECORD
- 4 -- (F) FIELD DATA
- 5 -- (L) LABORATORY DATA
- 6 -- (P) PENDING APPROVAL

```
PLEASE ENTER 1-6:
```

Select which type of flag to place with the analyses. Analyses of local interest may be flagged as COMPLETE, BUT DO NOT TRANSMIT. The program then asks if record identifiers will be entered from the terminal; if NO, you are prompted for the name of the file that contains the list of record identifiers. The file should contain the necessary identification beginning in column 1, one record per line.

Finally, you are asked if records are to be identified by record number, or by station number, date, time, medium code, and agency code. If the selected record is already flagged COMPLETE, BUT DO NOT TRANSMIT, a message is displayed giving you the option of changing the flag status or leaving the flag status as is. If the record identifiers are being entered from the terminal, the program updates the record and you are asked to enter another record (if selecting by record number) or to enter a new station number, date, time, medium code, and agency code. Valid District Processing Status codes are:

Processing Status Code	Description
N	New record
F	Field data
L	Laboratory data
P	Pending approval
R	Ready to transmit to Reston
T	Transmitted
Z	Local-use data

2.2.5 Option 5 -- Update Site File

(/usr/opt/nwis/util/stnup)

Option 5 consists of independent, Site File processing programs written by members of the Ground-Water Site Inventory Work Group. Instructions for use of the data-input routine are in the following postscript and World Wide Web documents.

/usr/opt/nwis/doc/gw/gwscreen-entry.input.ps or gwscreen-entry.input.html

and are not repeated here. The Edit and Update routines require no user input; explanations of their functions and messages can be found in the following postscript and World Wide Web documents:

/usr/opt/nwis/doc/gw/gwedit.ps or gwedit.html

and

usr/opt/nwis/doc/gw/gwupt.ps or gwupt.html

2.2.6 Option 6 -- Count Water-Quality Records

(/usr/opt/nwis/bin/qwcount)

Option 6, the **qwcount** program, is used to count the number of records in the Water-Quality File for the stations selected and optionally displays a list of the parameters present in all the analyses. The program then displays the following prompts:

```
QW DATA BASE PATHNAME IS: /usr/opt/nwis/data/midas/db01/gwfile
THIS PROGRAM LISTS THE COUNT OF QW RECORDS FOR A STATION
DO YOU WANT A LIST OF PARAMETERS (USING ADDPC)?
DO YOU WANT TO ENTER SITE ID'S FROM THE TERMINAL (YES OR NO)?
DO YOU WANT THE OUTPUT TO YOUR TERMINAL (T) OR TO A FILE (F)?
PLEASE ENTER T--FOR TERMINAL
      OR F--FOR FILE
PLEASE ENTER NAME OF FILE TO HOLD THE OUTPUT
PLEASE ENTER AGENCY CODE (QUIT TO END):
PLEASE ENTER SITE ID

LIST OF PARAMETERS BEING USED:
( 1) 00027
( 2) 00028
( 3) 39516
( 4) 39517
( 5) 00010
( 6) 00025
( 7) 00061
( 8) 00095
( 9) 00300
( 10) 00400
( 11) 00410
( 12) 00915
```

If you answer YES to the list of parameters, they are displayed in a single column. If you do not want to enter the site ID's from the terminal, you are queried for the name of the

input file. Next, you are asked if you want the output to the terminal or to a file. If a file is selected, the program then queries for the name of the output file. Now the program either reads the input file of agency code, station identification numbers (5 characters, 15 characters) or prompts for agency code and site ID (separated by a space). The station name; number of records; first record number, date, and time; and last record number, date, and time are then displayed on the terminal screen or written to an output file, as chosen. The output looks like the following:

```
STATION NAME:  Fake Station to Test Programs
COUNT OF QW RECORDS :      29
FIRST RECORD # 98800045 AND DATE AND TIME 198808181330
LAST RECORD # 99000035 AND DATE AND TIME 199004160801
*****
CONTINUE (YES OR NO)?
```

If you are entering the agency code and site ID from the terminal, or getting output to the terminal, you are prompted by CONTINUE (YES OR NO).

2.3 Function 3 -- Retrieve Samples

Function 3 of the main menu invokes the following submenu:

```

QW DATA PROCESSING ROUTINE           REV NWIS[version no.,YYYYMMDD]
YOU ARE USING WATER-QUALITY DATA BASE NUMBER (Data base currently
being used)

RETRIEVE SAMPLES OPTIONS

1 -- CHECK QW DATA ENTRY           7 -- RUN QWVALID TO EDIT DATA
2 -- MAKE LOG LIST OF QW          8 -- LOCATE DATA FROM
RECORD HEADER INFORMATION          MULTIPLE DATA BASES
3 -- LOCATE SITES AND/OR          9 -- MAKE WATER-QUALITY TABLES
SAMPLES                           FROM MULTIPLE DATA BASES
4 -- PROVIDE CATION-ANION          98 -- EXIT TO MAIN MENU
BALANCE
5 -- MAKE A PSTAT (FLAT FILE)      99 -- EXIT TO SYSTEM
DATA SET
6 -- MAKE WATER-QUALITY TABLES
(FILE OF RECORD NOS. NEEDED, USUALLY OBTAINED WITH OPTION 3)

Please enter a number from the above list or a UNIX command:

```

Figure 3. Retrieve Samples submenu

2.3.1 Option 1 -- Check Entry

(/usr/opt/nwis/bin/qwlist)

Option 1, the **qwlist** program, displays header information and analytical data for requested records. The program asks if a list of requested records is in a file or if the record identifiers will be entered from the terminal. The program then asks if the output should be written to the terminal or into an output file. The check entry routine gives you the choice of selecting records by record number or by station number, date, time, medium code, and agency code.

If the list of records is entered from the terminal, the program displays the first requested record on the terminal screen after displaying the prompt PLEASE ENTER RECORD NUMBER (QUIT TO END) (for record numbers), or the prompt READY TO CONTINUE (YES OR NO)? (for station numbers).

After the record is displayed on the terminal, the program again prompts: READY TO CONTINUE (YES OR NO)? If you supply record identification, the appropriate record information will be listed on the screen until a response of QUIT is entered in the station number to terminate the program.

If the list of records for the check-entry option is located in a file, the program prompts you for the file name and whether the records will be identified by record number or station number, date, time, medium code, agency code, and data category.

If the records are to be identified by record number, the format of the file is one record number per line, with the 8-digit record number beginning in column 1 of each line. If the records are to be identified by station number, date, time, medium code, agency code, and data category, the format of the input file is as follows:

Column	Description
1-5	Agency code
6-7	Data category (code QW)
8-22	Station number
23-46	Collection date
23-26	Begin year (YYYY)
27-28	Begin month (MM)
29-39	Begin day (DD)
31-34	Begin time (2400 hrs. system)
35-38	End year (YYYY)
39-40	End month (MM)
41-42	End day (DD)
43-46	End time (2400 hrs. system)
47	Medium code

2.3.2 Option 2 -- Log List (/usr/opt/nwis/bin/qwloglist)

Option 2, the **qwloglist** program, tabulates selected information for records within a selected water year for all sites, or for a list of station numbers (up to 50) and/or a range of dates. An example of the output from this program is included in option 2.3.2 of Appendix D. This table is written to a file and may be spooled to a remote printer at your request. You are queried at the beginning of the program for the name of a file (in your current directory) to hold the output. If the file does not exist, it is generated; if it does exist, it is either appended or overwritten (according to your response). You are then asked for the station numbers and the time period within a given water year for which the data are to be tabulated. If station numbers are entered via an input file, the program accepts station numbers with or without the USGS Agency Code.

When the selected records have been retrieved, they are ordered by record number; however, you may request that they be sorted into some other order. Up to six sort fields (station number, project code, processing status, date of last update, record number, and lab ID) are allowed, singly or in combination. When the sort request is complete, the program asks if data for another water year (and station numbers and/or date range) are to be retrieved. After the records are tabulated, the program notifies you of the output file name and offers to spool the output file. If the response to the "Spool(?) query is YES, you are prompted for the destination printer. A <cr> will default to the default local printer (usu-

ally PR0). If printing of the output file is requested, the program then displays a message regarding the completion of the spool request and control is returned to the RETRIEVE SAMPLES menu. An example of the output is included in Appendix D. Valid **qwloglist** status codes are:

Loglist Status Codes	Description
NEW	New record (Flag = N)
FIELD	Field data (F)
LAB	Laboratory data (L)
FD+LB	Pending approval (P)
APPRO	Ready to transmit to Reston (R)
LOCAL	Local-use data (Z)
TRANS	Record transmitted to Reston

2.3.3 Option 3 -- Locate Sites and/or Samples

(/usr/opt/nwis/bin/qwsiterec)

Option 3, the **qwsiterec** program, is a generalized retrieval routine, analogous to the Reston procedure QWRETR, Program E771. Unlike Program E771, however, this program does not retrieve analyses and write the data to work files. Instead, a list of record numbers that satisfy the retrieval request is written for use by other programs. The program has two sections; the first selects sites, the second selects water-quality records. Either section of the program may be skipped.

When the program is invoked, it first asks if you want to locate sites. If YES, a list of available criteria for site selection is displayed. Available selection criteria (which may be used in combination) are:

Available Criteria for Site Selection	
Agency code	-- up to 10 agency codes
State code	-- up to 10 State codes
County code	-- up to 40 county codes
Hydrologic unit code	-- up to 10 hydrologic unit codes
Drainage basin code	-- up to 10 drainage basin codes
Polygon	-- up to 50 vertices
Range of station numbers	-- only 1 range
Type of site	-- up to 10 site types

A list of valid agency codes are found in Appendix B. State and county codes can be obtained from the FIPS Code File (FIPSFILE) using the option described in section 2.4.5. Valid site types can be found in Appendix A.

The site-selection criteria are identified on the following screen:

AGENCY CODE: __ STATE CODE: __ COUNTY CODE: __
 HYDROLOGIC UNIT: __ DRAINAGE BASIN: __ POLYGON: __
 RANGE OF STATION NUMBERS: __ TYPE OF SITE: __

CHOOSE THE ITEMS YOU WANT TO RETRIEVE ON FROM THE FORM

ENTER X (OR x) -- TO SELECT AN ITEM
 ENTER CR -- TO SKIP AN ITEM
 ENTER Q (OR q) -- TO SKIP THE REST

If records are to be retrieved by polygons, the program asks if you have a file with the vertices in it. If YES, the program asks for the file name. The vertices should be in the file, one pair of latitude and longitude per line; latitude in columns 1-7 *right-justified*, longitude in columns 9-16 *right-justified*. You may have up to 50 vertices.

If you do not have the vertices in a file, the program asks if you want to store the vertices you are about to enter into a file. If YES, the program asks for a file name.

The program then asks if you want to get the latitude-longitude values from the FIPSFILE. If YES, the program asks for the 2-digit State code and the 3-digit county code. A county code of 000 will retrieve the State record values. If you do not want the values from the FIPSFFILE, the program asks you to enter them from the terminal. If records are to be qualified by site type, the following additional options are available:

For SW (stream) sites:

Base discharge (range)	-- only 1 range
Drainage area (range)	-- only 1 range

For GW (ground-water) sites:

Primary geologic unit	-- up to 20 geologic unit codes
Use of site	-- up to 10 use-of-site codes
Use of water	-- up to 10 use-of-water codes
Well depth (range)	-- only 1 range
Ground-water project ID	-- up to 10 project ID's

The selection criteria are ANDed together; that is, to be selected a site record must satisfy all the criteria. If no site-selection criteria are specified, the program uses a default of searching for sites with Agency Code equal to USGS. Use-of-site codes and use-of-water codes are listed in Appendix A.

After the Site File has been queried for sites that satisfy your selection criteria, you are told how many sites were selected and (if the number of selected records is greater than zero) asked if the records should be sorted. The selected records may be sorted on any combination of the following fields:

A -- Agency code	G -- Hydrologic unit
B -- Station number	H -- Drainage basin
C -- Station name	I -- Site type
D -- Latitude-longitude	J -- Use of water
E -- State	K -- Geologic unit
F -- County	L -- Ground-water project ID

You are then asked if the list of sites should be saved; if YES, you are prompted for a file name and the site identification for selected sites is written to the specified file. The records saved include the following variables: agency code, station number, station name, latitude, longitude, District code, State code, county code, datum, hydrologic unit code, station type (e.g., SW, GW, LK-RES) drainage area, geologic unit code, well depth, project number, and water level.

After sites are selected, or if you choose not to select sites, the program moves to the second section (selection of water-quality records). If sites were selected in section one, the list of selected sites is used to qualify the QW retrieval; if not, you are asked if records are to be selected only for specific sites and, if so, whether the list of site ID's will come from the terminal or from a file. If the site ID's are to be read from an input file, they should be listed in the file, one site ID per line. The correct format for the input file is:

Column	Description
1-5	Agency code (left-justified in column 1)
6-20	Station number (left-justified in column 6)

Water-quality records may be selected on any combination of the following criteria:

Date (range)

-- only 1 range

Analysis-level codes:

Medium code	-- up to 10 medium codes
Analysis source code	-- up to 10 analysis source codes
Hydrologic condition code	-- up to 6 hydrologic condition codes
Sample type code	-- up to 6 hydrologic event codes
Hydrologic event code	-- up to 6 sample type codes
Project ID	-- up to 10 project ID's
Geologic unit	-- up to 10 geologic unit codes
Processing status	-- up to 6 processing status codes
Parameter codes and values	-- up to 50 parameter codes -- up to 50 parameter value ranges (minimums-maximums)

Parameter-level codes:

Remark codes	-- up to 5 remark codes
Quality-assurance codes	-- up to 5 quality-assurance codes
Method codes	-- up to 5 method codes

Valid remark and quality assurance codes are listed in Appendix A. Method codes are listed in Appendix C.

The requested selection criteria are ANDed together, that is, *all* must be satisfied to qualify a record for selection, *except* parameter values and codes. Prior to the first parameter selection you are prompted for a **NOT** option. This option is used to locate records with missing data. For example, if the **NOT** option is selected with parameter code 00010, only records without temperature (parameter code 00010) are selected. If parameter values and codes are chosen, you are asked for *each parameter after the first*, whether the relation to the previous parameter is **AND** or **OR**.

If no water-quality record-selection criteria are specified, the program uses a default date range from 1776 to present. The water-quality parameter selection criteria are identified on the following input form:

```

DATE: _ ANALYSIS-LEVEL CODES: _ PROJECT ID: _ GEOLOGIC UNIT: _
PROCESSING STATUS: _ PARAMETER VALUES AND CODES: X
YOU MAY SELECT UP TO 50 PARAMETER CODES
ENTER Q IN ANY FIELD TO SKIP THE REST OF THE FORM
PLEASE END THE LIST WITH A BLANK

NOT: _ PARAMETER CODE: _____ MINIMUM: _____ MAXIMUM: _____
REMARK CODES: _____ QA CODES: _____ METHOD CODES: _____
A MINIMUM OR MAXIMUM VALUE OF BLANK MEANS NO RESTRICTION
YOU MAY ENTER UP TO 5 REMARK CODES, QA CODES, AND/OR METHOD
CODES WITH NO INTERVENING BLANKS
TO GET ONLY ANALYSES WITHOUT REMARKS, PLEASE ENTER A Z IN
THE REMARK LIST.

*SELECTION OF THE NOT OPTION (X OR x) QUALIFIES RECORDS ONLY
IF PARAMETERS ARE NOT PRESENT IN THE RECORD.

```

After water-quality records are selected, you are told how many records were selected and (if the number of selected records is greater than zero) asked if the records should be sorted. Selected records may be sorted on any combination of the following fields:

A -- Agency code	F -- Geologic unit code
B -- Station number	G -- Processing status
C -- Dates and times	H -- County code
D -- Medium code	I -- Station name
E -- Project ID	J -- Site type

The selected record numbers are then written to your file and you are asked if the list of sites with QW data should be saved. If YES, you are prompted for a file name; the site identification for sites with QW data is written to the specified file in the format of: agency code, station number, station name, latitude, longitude, State code, county code, datum, hydrologic unit code, station type (e.g., SW, GW, LK-EST), drainage area, geographic unit, well depth, project number, and water level, if these fields have been populated; and the program ends.

2.3.4 Option 4 -- Sample List and/or Balance (/usr/opt/nwis/bin/qwbal)

For selected analyses the **qwbal** program creates: 1) a list of parameters and their values, 2) a cation-anion balance table, or 3) both.

When the program is invoked, it first asks if sample identification is to be entered from the terminal. If the answer is NO, the program requests the name of a file (full pathname allowed, up to 32 characters) that contains a list of sample identifiers. This file should contain the necessary identification information (record number or agency code, data cate-

gory, station number, begin date and time, end date and time, and medium code). If record numbers are not used for identification, the file should be in the following format, one entry in the file for each requested record.

Col. 1-5	Agency code
6-7	Data category (QW)
8-22	Station number (left-justified)
23-30	Begin date (YYYYMMDD)
31-34	Begin time
35-42	End date (YYYYMMDD)
43-46	End time
47	Medium code

Then, or if, sample identification is to be entered from the terminal, the program prompts for the name of a file to hold the output.

The program then asks which output options you wish (parameter list, balance table, or both) and whether records are to be selected by record number or by agency code, station number, date, time, and medium. The program prompts for another identifier after processing each record; a record number or station ID of **QUIT** signals the end of the list. On concluding, the program offers to spool the output file before exiting. An example of output from this program is included in option 2.3.4 of Appendix D.

2.3.5 Option 5 -- Make a P-STAT Data Set

(/usr/opt/nwis/bin/qwpstat)

Option 5, the **qwpstat** program, places selected data from specified records into a sequential file that may be read by the standard P-STAT input routines. **Note:** The pstat flatfile is not a conventional flatfile, which is available under the utilities menu (sec. 5.7). Records to be retrieved *must* be identified by unique record number and a file (full pathname allowed, up to 50 characters). The necessary list of record numbers is usually generated by running Option 3 -- Locate samples. If you wish to create a list using the editor, the 8-digit record numbers should begin in column 1, one entry per line).

The program first asks for the name of the file that contains the record numbers, then for the name of a file to hold the output data. You then have three options for handling values that include remark codes:

1. Remark codes may be included with the associated values in the output file.
Note: This format is invalid for input to **qwpstat**; it is provided for data verification only.
2. Remark codes may be suppressed and only the associated values included in the output file. For a remark code of ND (not detected) there is no associated value; the output file will contain "--" (missing value of the first kind).
3. All values associated with remark codes may be replaced with "--" (missing value of the second kind).

Regardless of which option is chosen, a summary list of remarked values is produced in a separate output file.

The program then asks if the desired parameters should be entered from the terminal. If YES, the following is displayed:

PARAMETER ENTRY PROCESSING:

PLEASE ENTER A 5-CHARACTER PARAMETER CODE AT EACH PROMPT.
 (PLEASE ENTER A BLANK TO END THE PARAMETER ENTRY.)
 (ALPHA PARAMETERS ALLOWED: ADDPC, CALCV, SAMPL)

and you then enter the parameter codes to be retrieved. If NO, you are asked for the name of the file that contains the parameter list; the file is opened and read; and the program continues with no additional input. (The supplied file should contain the desired 5-digit parameter codes beginning in column 1, one parameter per line). If the parameter list is not in a file, you are prompted to enter each parameter from the terminal; a null entry (carriage return) ends the list. Only numeric parameters and the three alpha parameters ADDPC, CALCV and SAMPL are valid. A maximum of 997 parameters may be included. When the program ends, the name of the output file is printed at the terminal.

The first record for each analysis contains the station number, begin date, begin time, end date, and end time. If date or time are missing, as they may be for some historic samples, they are represented by "-" (missing value of the first kind). The remaining records for each analysis each contain a maximum of eight data values; the values are in the order in which parameter codes were entered. Each value occupies nine spaces and is preceded by a blank; the values are rounded according to the standards given in the Parameter Code Dictionary. If there is no value for a requested parameter, the value is represented by "-" (missing value of the first kind). See section 2.2.3 for information on precision codes and rounding.

A second output file, the name of which is formed by adding ".CMND" to the file name you supply, contains the PSTAT BUILD command to identify the variables and read the data; this file also consists of 80-character records. A third output file, whose name is formed by adding ".STATS" to the supplied file name contains a summary list of all values that have remark codes. The list includes (for each parameter code) every unique combination of remark code and value found, and a count of occurrences of that combination.

2.3.6 Option 6 -- Water-Quality Table

(/usr/opt/nwis/bin/qwtable)

Option 6, the **qwtable** program, is the NWIS water-quality data-processing tabling routine used to prepare publication tables of water-quality data. NWIS supports the table types and options previously available from the Reston WATSTORE system on the Amdahl. In addition, three extensions are supported on the UNIX water-quality system:

- 1 -- A maximum of 1,000 parameters may be included in a table (997 if the 3 header parameters are included).
- 2 -- *For single-station format only*, composites that span the end of a month are permitted and are printed with the proper dates.

3 -- Tables of biological data, similar to those previously produced by the WATSTORE program BIOTAB on the Amdahl computer, may be produced by selecting table type 4.

The program first asks for the name of the file that contains the list of record numbers to be tabled. This list is usually generated by Option 3 -- Locate Samples, but a list may be created with the editor; each 8-digit record number is entered on a separate line, beginning in column 1. After the input file is identified and opened, the program asks for the name of a file to contain the output table. If the specified output file already exists, you are asked if the file is to be reused. If YES, the program asks DO YOU WANT TO OVERWRITE OR APPEND? (i.e., replace the data already in the file, or leave it intact and add the new table to the end of the file).

The program now proceeds to collect the list of options for the proposed table. Within this program, the list of options that describe the table is referred to as the table definition. This definition, once established, may optionally be saved in a user-named file and used to define similar tables in subsequent program runs. The table definition also may be edited using one of the UNIX text editors (e.g., vi, xedit, emacs) prior to running the tabling program. After the output file name is established, the program asks:

DO YOU WANT TO USE AN EXISTING TABLE DEFINITION (YES OR NO)?

If YES, the following is displayed:

```
ENTER NAME OF FILE HAVING TABLE DEFINITION
(FULL PATHNAME OK, UP TO 50 CHARS)
(99 TO END) :
```

If the specified file exists, the definition is retrieved and displayed. The program asks if this is the desired definition and, if so, are changes to be made to the definition. If no existing definition is to be used, the program displays the following form:

```
TABLE TYPE (1,2,3,OR 4): _
DELETE COLUMN IF NO DATA (Y OR N): Y    PRINT PARAMETER CODES (Y OR N): Y
LINES PER PAGE: 90    FOLDING OPTIONS (0,1,2,OR 3): _
REMOVE HEADING LINE (Y OR N): N
```

If uncertain about the meaning of a field on the form, an entry of question mark (?) will produce an explanation of the field and the effect of each option to be displayed; the cursor then returns to the same field for entry of the option value. The cursor is positioned at the underline character on line 1 for input. Examples of these options are found in Appendix D. The meanings of the TABLE TYPE codes are:

1 -- Single-station format	3 -- Multiple-station format
2 -- Miscellaneous-station format	4 -- Tables of biological (taxonomic) data

The default table type is type 1 -- Single-station format. The values following the colon (:) on succeeding lines are the default values that will be used if a carriage return is entered for the field.

If TABLE TYPE 1 is selected, two additional fields (REPORTING YEAR and TABLE TITLE) are added to the screen:

```
TABLE TYPE (1,2,3,OR 4): _ REPORTING YEAR (W=WATER,C=CALENDAR,
                                BLANK=NO BREAK): _
DELETE COLUMN IF NO DATA (Y OR N): Y PRINT PARAMETER CODES (Y OR N): Y
LINES PER PAGE: 90      FOLDING OPTIONS (0,1,2,OR 3): -
REMOVE HEADING LINE (Y OR N):      N TABLE TITLE: 0
```

The REPORTING YEAR option allows a page break and new headings each time the water year or calendar year changes; the default of blank suppresses this page break.

The DELETE COLUMN IF NO DATA option refers to the situation where none of the selected analyses contains a value for one of the requested parameters; the column can be removed entirely (Y) or the column headings can be retained and the no-value indicator of "--" printed for each analysis (N). The PRINT PARAMETER CODES option allows parameter codes to be included in the column headings (Y) or omitted (N). The default page length of 90 lines gives a page with the proper proportions for reduction to the standard Data Report page size. To modify the 90 lines per page, enter the appropriate number of lines, starting where the cursor is positioned, not over the "9" in "90," as spacing is considered part of the page length. The allowable FOLDING OPTIONS are:

- 0 -- No folding, applicable to all table types
- 1 -- Horizontal folding, 24 to 100 parameters per page, applicable to type 1 tables only
- 2 -- Horizontal folding, 11 to 100 parameters per page, applicable to type 1 and type 3 tables only
- 3 -- Vertical folding, maximum of 5 parameters (including date), applicable to type 1 and type 2 tables only

The REMOVE HEADING LINE option refers to the top line of the table that includes the District code and processing date; the line can be omitted (Y) or retained (N).

If TABLE TYPE 2 is selected, no additional information is requested and processing continues, as described later on page 2- (see paragraph beginning, "When the definition . . .").

The TABLE TITLE option allows you to select any of the following standard titles to be placed on each page of the table:

Table 1. Standard titles for Type 2 tables

Title Option	Description
0	WATER-QUALITY DATA
1	CHEMICAL ANALYSES
2	PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT
3	PARTICLE-SIZE DISTRIBUTION OF SURFACE BED MATERIAL
4	SUSPENDED SEDIMENT DISCHARGE
5	SPECTROGRAPHIC ANALYSES
6	RADIOCHEMICAL ANALYSES

Table 1. Standard titles for Type 2 tables

Title Option	Description
7	PESTICIDE ANALYSES
8	WATER LEVEL, IN FEET, BELOW LAND-SURFACE DATUM
9	ELEVATION IN FEET, NGVD
A	WATER LEVEL, IN FEET ABOVE OR BELOW LAND-SURFACE DATUM
X	CROSS-SECTION ANALYSES
Z	ENTER YOUR OWN HEADING (80 CHARACTERS MAXIMUM)

An additional new option, Z, allows supplying any desired nonstandard title. If option Z is selected, the word "TITLE:" is displayed on a new line, and the cursor set to accept input; the user-supplied title may have a maximum length of 80 characters.

If Table Type 3 is selected, additional options are added to the form after REMOVE HEADING LINE as follows:

```
TABLE TYPE (1,2,3,OR 4): _
DELETE COLUMN IF NO DATA (Y OR N): Y PRINT PARAMETER CODES (Y OR N):
LINES PER PAGE: 90 FOLDING OPTIONS (0,1,2,OR 3): _
REMOVE HEADING LINE (Y OR N): N COUNTY SKIP OPTION: _
LEFT ADJUST LOCAL ID (Y OR N): N PRINT DATES (Y OR N): Y
CENTER STATION ID (Y OR N): N REPEAT DUPLICATE ID'S (Y OR N): N
SKIP A LINE ON CHANGE OF STATION (Y OR N):N DATA FOR CONTINUING PAGES:1
```

These additional options are applicable only to type 3 tables. The COUNTY SKIP option is applicable only if the alpha parameter CNTYC is included in the parameter list. If CNTYC is the *last* parameter in the list, county codes are used but *not* included in the table; if one of the skip options is invoked and CNTYC is not in the parameter list, it is added as the last parameter. The following COUNTY SKIP options are available:

- 0 -- No skip; not sorted by county (default).
- L -- Skip 3 blank lines; do not print county name.
- P -- Skip a page; do not print county name.
- Q -- Skip 3 blank lines; print county name.
- R -- Skip a page; print county name.

The LEFT-ADJUST LOCAL ID option is applicable only if the alpha parameter LOCAL is included in the parameter list; the local identifier (usually well number) may be left-justified under the column heading (Y) or printed verbatim with any blanks that may be included in the Site File retained (N).

The PRINT DATES option allows for the suppression of the DATE column in type 3 tables. If the alpha parameter DATES is not included in the parameter list, it is added by the program after the last alpha parameter. This column may be included in the table (PRINT DATES = Y) or the column may be omitted (PRINT DATES = N).

The CENTER STATION ID option affects the alpha parameters STAID (station number) and SNAME (station name). These values may be centered under their column heading (Y) or printed exactly as they are found in the Site File, with any blanks retained (N).

The REPEAT DUPLICATE ID'S option affects the alpha parameters STAID, LOCAL, and LATLG (latitude-longitude). If the analyses are sorted on one of these fields, the value may be printed with every analysis (Y) or printed only for the first analysis (N).

The SKIP A LINE ON CHANGE OF STATION option affects the alpha parameter STAID and is valid only if the analyses are sorted by station identifier. The program will insert a blank line before each new station if you answer "Y".(A blank line is inserted after every five analyses whether or not this option is invoked.)

The DATA FOR CONTINUING PAGES option allows you to select the identification that will be printed with an analysis if the number of parameters selected requires more than one page per analysis. The seven available options are:

- | | |
|------------------------|---------------------------------|
| 1 -- Date | 5 -- Latitude-longitude |
| 2 -- Station number | 6 -- Station number and date |
| 3 -- Station name | 7 -- Local well number and date |
| 4 -- Local well number | |

The default for this option is number 1, Date.

If TABLE TYPE 4 is selected, the menu is similar to table type 1 with DELETE LINE replacing DELETE COLUMN. PRINT PARAMETER CODES and FOLDING OPTIONS are skipped over during processing. The TABLE TITLE options shown in table 2 are displayed for TABLE TYPE 4:

Table 2. Titles for Type 4 tables

Title Option	Description
B	BENTHIC INVERTEBRATE ANALYSES
C	PHYTOPLANKTON ANALYSES
D	PERIPHYTON ANALYSES
Z	ENTER YOUR OWN HEADING (80 CHARACTERS MAXIMUM)

When the definition is completed, you are asked, DO YOU WANT TO CHANGE THE DEFINITION? If YES, the cursor is positioned on the first option after TABLE TYPE and you are instructed to <cr> over fields that are acceptable and change fields that are incorrect. This cycle is continued until you answer NO to DO YOU WANT TO CHANGE THE DEFINITION?.

The **qwtable** program then gives you the option of saving the table definition for reuse and then asks if parameters are to be entered from the terminal. If NO, you are prompted for the name of a file that contains the list of parameters to be tabled. This file should contain valid parameter codes (with leading zeros) beginning in column 1, one parameter per line. If you choose to enter parameters from the terminal, a prompt of ">" is entered for each parameter; the parameter list is ended by entering a null (<cr>). Numeric parameters contained in the Parameter Code Dictionary are supported. Alpha parameter codes supported by this tabling routine are shown in table 3:

Table 3. Alpha parameter codes supported by the qwtable routine

Alpha Parameter Codes	Description
ADDPC	All parameters in analyses
AGNCY	Agency code -- 5 characters
ANULL	Blank 9-character column for spacing
ASRCE	Analysis source -- 1 character
ASTAT	Analysis status -- 1 character
ATYPE	Analysis type -- 2 characters
CALCV	Calculated parameters
CNTYC	County code -- 3 characters
CTBDA	Contributing drainage area -- 8 characters
DATES	Sample dates, month-day-year -- 6 characters
DISTR	District code -- 2 characters
DBNUM	Data base number of the qwdata
EDATE	Ending date -- 6 characters YYMMDD
ETIME	Ending time -- 4 characters
EVENT	Hydrologic event -- 1 character
GUNIT	Geologic unit code -- 8 characters
HSTAT	Hydrologic condition code -- 1 character
HUNIT	Hydrologic unit -- 8 characters
LABNO	Laboratory number -- 7 characters
LATLG	Latitude-Longitude sequence number -- 15 characters
LOCAL	Local well number -- 26 characters
MEDIM	Medium code -- 1 character
SAMPL	Record number -- 8 characters
SITEC	Site type -- 2 characters
SNAME	Station name -- 50 characters
STAID	Station number -- 15 characters
STATE	State code -- 2 characters
STYPE	Sample type code -- 1 character
TIMES	Sample times -- 4 characters

Parameters are placed in the table *in the order in which they are found in the list.*

If the alpha parameter CALCV (include all possible calculated parameters) is included, the calculated parameters, in ascending order of parameter code, are included at the point where the CALCV parameter was entered.

If the alpha parameter ADDPC is included, it *must* be the last parameter in the list; the program will not read more parameters after ADDPC.

If the alpha parameter ADDPC is included, all *numeric* parameters (including those calculated parameters that might be stored) are printed in ascending order of parameter code. Alpha parameters are not sorted.

A maximum of 1,000 parameters may be included in a single table (997 if the 3 header parameters are included).

If an invalid numeric parameter is requested, an error message is written and the requested parameter is ignored.

If the alpha parameter DATES is not included in the list, it is inserted as the first parameter. (Date printing may be suppressed for type 3 tables *only*).

If vertical folding is requested and more than five parameters (including DATES) are requested, the program responds with a parameter count and then an error message; whether the parameters are entered from the terminal, or read from a file, the entire parameter list must be reentered.

Multiple occurrences of the same parameter are not permitted; if a parameter is entered more than once, the first occurrence is retained and others are deleted from the list.

Parameters other than biological (taxonomic) parameters and medium codes other than L, M, N, O, and P will be eliminated by the program for table type 4.

Rounding Options:

When parameters have been entered, the program prompts for your choice of rounding options.

Note: *Rounding of 5's on the Data General Unix system tends to be up, rather than down as was the case for the Prime. However, rounding of 5's can be up or down, depending on how the value is stored in the database. For example: 22,500 may be rounded to 23,000, but if the value is stored as 22,499.9999 it may be rounded to 22,000.*

The rounding options are as follows:

- default rounding (D), which produces tables with each individual parameter value rounded to the appropriate level using the rounding instructions stored in the Parameter Code Dictionary;
- user-defined rounding (U), which produces tables with each individual parameter value rounded using the rounding instruction stored in the analysis at the parameter level (precision code*) -- (Note: with the 1997 annual data report, all water-quality tables published in the annual data report that contain data from the

National Water Quality Laboratory must be printed using this option rather than default rounding. The table program allows printing of values to four decimal places, a format that the laboratory now uses); or

- no rounding (N), which produces tables with each individual parameter unrounded (output as stored in the analysis but converted to real value from character representation).

*Note: A precision code determines how a number is rounded, based on its magnitude. A precision code (number of significant figures and decimal positions) is stored for each parameter code in the parameter code dictionary. The parameter-code-dictionary precision code is used when the “default-rounding” option is requested for tables and other outputs. Users have the option of entering a precision code (a number from 1 to 9) for a specific parameter code value by coding the last field of the parameter description. The precision code stored with a specific parameter code value is used when the “user-defined rounding” option is requested for tables and other outputs. A precision code in excess of 6 will have no meaning due to the storage of the data in floating point representation in the Water-Quality File. For more information on precision codes, see section 2.2.3. Following are examples of how the precision code of “2” would affect the reporting of data, including zero values:

.0012 rounds to .00
 .012 rounds to .01
 .025 rounds to .03 (Numbers ending in “5” are always rounded up.)
 .123 rounds to .12
 1.23 rounds to 1.2
 1,234 rounds to 1,200
 12,345 rounds to 12,000

The program then informs you that data are being processed. Processing consists of retrieving the requested values and doing any necessary rounding, calculating, and editing. The program displays the number of records retrieved in increments of 100. When this process is completed, the program informs you that data are processed and tabling is beginning. (These messages are given so the terminal user will know that something is being done; very long tables take a long time to prepare). When the table is finished, the program writes a message, prints the name of the file that contains the finished table, and asks if you want to prepare another table at this time. If YES, the program dialog starts over from the beginning; if NO, the program ends.

2.3.7 Option 7 -- Edit-Validation Program (/usr/opt/nwis/bin/qwvalid)

Option 7, the **qwvalid** program, performs the chemical logic and validation checks for selected analyses*. Analyses are selected by record number. On entry, the program asks if record numbers are to be entered from the terminal. If NO, the program asks for the name of the file that contains the list of selected record numbers. The program then asks for the name of a file to hold the output. If you choose to enter record numbers from the terminal,

the program asks for a record number after processing each analysis; an entry of **QUIT** in the record number field terminates the program. The program notifies you of the output file name and offers to spool the file. If the response to the “**SPOOL(?)**” query is YES, you are prompted for the destination printer. A <cr> defaults to the local printer.

Data written to the output file include the record number, station ID, analysis date and time, and the number of parameters stored for the analysis. An example is in option 2.3.7 of Appendix D. A list of parameters and values that exceed alert limits or fail chemical logic checks is output. If sufficient data are available, the percent difference is output. A list of parameters and their values is produced. When comparing computed values to stored values, both values are first rounded (using the precision information stored in the Parameter Code Dictionary); an error message is generated only if the rounded values are not identical. Invalid parameters (not in the Parameter Code Dictionary) and parameters with invalid negative values are deleted from the record. The output file contains carriage-control characters and should be spooled with the -ftn option.

The alert messages have been modified in anticipation of an improved alert reporting system. Alert messages will include the appropriate code: DW for Drinking Water, AQ for Aquatic, or REC for RECREational standards.

**Note:* This program requires a relatively long time to execute; if many analyses are to be checked, a script file should be prepared with answers to the program queries and run as a background or batch job.

2.3.8 Option 8 -- Locate Data from Multiple Data Bases (/usr/opt/nwis/bin/qwmdb_loc)

Option 8, the **qwmdb_loc** program, retrieves site information and/or record numbers for water-quality analyses from two data bases. If site information is retrieved, two files are output (one for each data base). If water-quality records are retrieved, one file is output that contains the record numbers from both data bases. A data-base number is attached to each record number to identify the location of the data.

User input to the **qwmdb_loc** program follows the input requested by **qwsiterec** (sec. 2.3.3) with the addition of data-base numbers. A first and second data-base number is entered by the user. The order of these data-base numbers is not critical. The output to the screen reflects the operations to each data base.

A single set of selection criteria and sort options are used for both data bases. The details of these selections and options are provided in section 2.3.3.

2.3.9 Option 9 -- Multiple Data-Base Tables (/usr/opt/nwis/bin/qwmdb_tbl)

Option 9, the **qwmdb_tbl** program, uses the file of record numbers output from **qwmdb_loc** to produce water-quality tables of data from two data bases. The data-base numbers used are contained in the file of record numbers, so no additional user input is required. The tabling options are exactly the same as the options available for **qwtable**. See section 2.3.6 for details of the available options.

2.4 Function 4 -- Check Support Files

Function 4 of the main menu displays the following submenu:

```

CHECK SUPPORT FILES OPTIONS

1 -- LIST SITE RECORDS
2 -- CHECK PARAMETER CODE DICTIONARY
3 -- LIST PARAMETER CODE DICTIONARY
4 -- CHECK GEOLOGIC UNIT CODE FILE
5 -- CHECK FIPS CODE FILE
6 -- LIST STATE/COUNTY DATA
7 -- DUMP PARAMETER CODE DICTIONARY WITH PRECISION CODES
8 -- DISPLAY CONTENTS OF ALGORITHM FILE

98 -- EXIT TO MAIN MENU

99 -- EXIT TO UNIX

```

Please enter a number from the above list or a Unix command:

Figure 4. Check Support Files submenu

2.4.1 Option 1 -- List Site Records

(/usr/opt/nwis/bin/qwshowsite)

Option 1, the **qwshowsite** routine, produces a list, to the terminal or to a file, of the contents of selected Site File records. If to a file, the program asks for the output file name (maximum of 32 characters). You are then asked if station numbers will be entered from the terminal (a maximum of 400 station numbers are allowed.). If YES, a blank line is displayed. Enter the five-character code (a blank space will follow if a four-character agency code is entered) and the station number. Depending on the agency code and length of station ID, the input would look like the following example:

```

USGS 01123456
USEPA01123457
USGS 390000110300001

```

If NO, you are prompted for the name of a file that contains a list of station numbers. The input file should be in the following format:

```

Agency code      -- 5 characters (left-justified)
Station number -- 15 characters (left-justified)

```

The output file includes carriage-control characters, and should be spooled with the -ftn option. Example output is included in section 2.4 of Appendix D.

2.4.2 Option 2 -- Check Parameter Code Dictionary

(/usr/opt/nwis/bin/qwckpcd)

Option 2, the **qwckpcd** routine, retrieves records from the Parameter Code Dictionary and displays the parameter code and descriptive name at the terminal. Parameter codes are 5-digit numbers used to identify water-quality constituents and properties in the USGS National Water Information System and the U.S. Environmental Protection Agency Data Storage and Retrieval System. Three types of retrievals are available:

- Retrieve data for a parameter name.
- Retrieve data for one parameter code.
- Retrieve data for a range of parameter codes.

For the name retrieval type, parameters that have a "long name" beginning with the character string entered are retrieved and displayed. This retrieval can be useful for getting a list of all allowable parameters for different forms of an element; for example, NITROGEN. When the program has completed the search, you can select a complete search for the provided name anywhere it appears in the long name of the Parameter Code Dictionary. To exit a retrieval by parameter name subroutine, the entire word QUIT must be entered.

2.4.3 Option 3 -- List Parameter Code Dictionary

(/usr/opt/nwis/bin/qwpcdlist)

Option 3, the **qwpcdlist** routine, retrieves and lists the entire Parameter Code Dictionary and is somewhat time-consuming, depending on system activity. When the dictionary has been read, it can be sorted by combinations of parameter code, long name, table order number, and short name. Again, the sort requires some time to run because of the size of the dictionary. After the sort finishes, you have the option to eliminate the long name from the output (to save paper and/or viewing and printing time). Once again, time to create the output is lengthy.

The output file is *qwpcdlist* and a warning message about its length is included in the program-ending message. Example output is included in section 2.4 of Appendix D.

If you want to retrieve the Parameter Code Dictionary with precision codes, see section 2.4.7.

2.4.4 Option 4 -- Check Geologic Unit Code File

(/usr/opt/nwis/bin/qwckgeo)

Option 4, the **qwckgeo** routine, retrieves geologic unit codes and formation names and displays them at the terminal. The program asks for a geologic unit code and retrieves the associated name.

You can either provide the entire geologic unit code (for example, 111ALVM) and, if that code exists, get back the formation name (Holocene alluvium), or a partial geologic unit code (from one to eight characters). An entry of the partial geologic unit code (12) results in retrieval (by partial key search) of all geologic unit codes and associated formation names between 119xxxx and 130xxxx. A blank geologic unit code terminates the program.

2.4.5 Option 5 -- Check Federal Information Processing Standards (FIPS) Code File (/usr/opt/nwis/bin/qwckfips)

Option 5, the **qwckfips** routine, is used to browse in the FIPS Code File (FIPSFILE) and retrieve a State code given a State name, a State name given a State code, a county code given a State-county name, and a county name given a State-county code. The options are:

- 1 -- Exit the program,
- 2 -- Get a State code,
- 3 -- Get a State name,
- 4 -- Get a county code, or
- 5 -- Get a county name

2.4.6 Option 6 -- List State/County Data (/usr/opt/nwis/bin/qwckstcty)

Option 6, the **qwckstcty** routine, also interacts with the FIPSFILE (see sec. 2.4.5), and is used to retrieve a tabular list of State names, State abbreviations, State codes, minimum and maximum latitudes, minimum and maximum longitudes, and minimum and maximum altitudes. You may also retrieve county names, county codes, minimum and maximum latitudes, minimum and maximum longitudes for a single State, and both of the previous lists of data for all counties for all States (long and time-consuming). The output can be to the terminal or to a file. Example output is included in option. 2.4.6 of Appendix D.

2.4.7 Option 7 -- List Parameter Code Dictionary with Precision Codes (/usr/opt/nwis/bin/qwpcddump)

Option 7, the **qwpcddump** program, retrieves and lists (dumps) selected columns of the entire Parameter Code Dictionary. There are two output options, the long name or the short name. The long name includes the parameter code, the short name, and the full long name (170 characters). The short name, table order, output includes the parameter code, the short name, the table order, the first 40 characters of the long name, the units, and the precision.

An example of precision code output for parameter code 00010, water temperature, is 0012333331. This means:

Display Number of		
<u>For values in the range</u>	<u>Significant digits</u>	
<0.01	0	(values this small not expected)
0.01 - 0.0999	0	(values this small not expected)
0.1 - 0.999	1	
1.0 - 9.999	2	
10.0 - 99.999	3	
100.0 - 999.999	3	
1000.0 - 9999.999	3	
10000.0 - 99999.999	3	
>100000.000	3	
Max Decimal Places	1	

For a complete explanation of precision codes, see sections 2.2.3 and 2.3.6.

The program first asks if you want the long-name or the short-name output, and warns that the output can be very large. This program takes a few minutes to execute and creates an output file called **qwpccddump**. This file is 300 to 400 UNIX records, depending on the option selected. An example of the short name output is in option 2.4.7 of Appendix D.

2.4.8 Option 8 -- Display Contents of Algorithm File

Option 8, the qwalgcon program, is used to display the contents of the algorithm file. (More text to be added later.)

2.5 Function 95 -- Water-Quality Utilities Options

Function 95 of the main menu invokes the following submenu:

```
QW DATA PROCESSING ROUTINE      REV NWIS[version no.,YYYYMMDD]
YOU ARE USING WATER-QUALITY DATABASE NUMER 01
WATER-QUALITY UTILITIES OPTIONS
1 -- CHANGE DEFAULT DATA BASE NUMBER
2 -- RUN QWFIXED TO PRODUCE 1 AND *-CARD OUTPUT
3 -- QWGRAPH ROUTINES
4 -- CREATE FLATFILE OUTPUT
5 -- CREATE FLATFILE OUTPUT WITH METHOD
6 -- DATAGRAF/QWFLOATOUT INTERFACE
98 -- EXIT TO MAIN MENU
99 -- EXIT TO SYSTEM

Please enter a number from the above list or a Unix command:
```

Figure 5. QW Utilities Submenu

2.5.1 Option 1 -- Change Data-Base Number

(/usr/opt/nwis/support/user_dbn_def)

Option 1, the **user_dbn_def** program, is an independent function written by the Ground-Water Site Inventory work group, and is used to change your default data-base number. When the program is invoked, a submenu (see below) appears from which to select the appropriate option.

```
Program MOD.USER_DBN_DEF
Program to allow user to modify data-base numbers
Possible actions:
1. List public databases at this site
2. List my current database numbers
3. Change database number for GWSI only
4. Change database number for QW only
5. Change database number for GWSI and QW
9. Exit routine to change database numbers

Choose Action:
```

Figure 6. Change Data-Base Number submenu

When you select option 1 from the submenu, the program accesses a file called *site.dbn.def* located in the */usr/opt/nwis/support* directory. This file is modified appropriately by individual Districts for their specific use. An example of the *site.dbn.def* file follows:

```
*      This file described the public databases available at this
*      site. Not all databases need to be included here--this is
*      just for the user's information when the user wants to
*      change database numbers. This file is not checked for
*      valid numbers nor does an entry here mean the user has
*      access to the database.
*
*      A comment starts with an "*" and will not be displayed to
*      the user.
*
*      Use any editor to update this ascii file. If done from the
*      menu, the editor specified in your NWIS editor environment
*      variable will be used. If you have not set this variable, then vi.
*
Data Base #01 - Standard data base for this site.
```

The DBA must modify this file by adding to the end of the file the appropriate data-base number and a brief description of that data base.

Selecting option 2 of the submenu displays the current GW and QW data bases you are accessing. Options 3, 4, and 5 modify the */usr/opt/nwis/support/user:dbn.def* file and allows you to change the data base that is used. To exit the program, select option 9.

2.5.2 Option 2 -- Produce 1- and *-Cards (/usr/opt/nwis/bin/qwfixed)

Option 2, the **qwfixed** program, is used to retrieve selected records from the UNIX Water-Quality File and outputs the data in 1- and *-card format. A more detailed discussion exists in section 4.4 of this manual.

2.5.3 Option 3 -- Interactive Graphic Programs (/usr/opt/nwis/bin/qwgraph)

Option 3, the **qwgraph** program, brings up a submenu similar to the one described in section 5 of this manual. The options listed in this submenu also are discussed in section 5.

2.5.4 Option 4 -- Flat File Output (/usr/opt/nwis/bin/qwflatout)

Option 4, the **qwflatout** program, is designed to output data from the Water-Quality File in two formats: a flat file for use in application programs, or an RDB file . This option is discussed in section 5.7 of this manual.

2.5.5 Option 5 -- Flat File Output With Method (/usr/opt/nwis/bin/qwflatoutm)

Option 5, the **qwflatoutm** program, outputs data from the Water Quality File in two formats: (1) a flat file that includes method codes, or (2) an RDB file that includes method codes. The program is different from the **qwflatout** program (sec. 5.7) in the following ways:

- Produces records up to 10,000 bytes long (versus 3,500 bytes). This program allows more than 1,000 parameter codes per retrieval.
- Prints parameter-analysis method codes adjacent to the remark codes.
For example:
“<B 10.” indicates a less-than 10 value using method “B”.
Thus, each parameter code listed in the “.parnames” file indicates a triplet of fields in the data file: a 1-byte remark code, a 1-byte method code, followed by an 8-byte value for the parameter.
- Does *not* access alternate parameter-code dictionary, if one exists.

There are no changes to program dialogue from the original version (sec. 5.7). To change data bases, use the standard Q.

2.5.6 Option 6 -- DATAGRAF

DATAGRAF is a computer software system for data analysis and graphical displays and was not converted from the Prime to the Unix operating system. The replacement for DATAGRAF is QWGraf. For further information, contact the Hydrologic Analysis Software Support (HASS) unit, electronic mail h2osoft@usgs.gov.

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3 Lab Programs--Interactive and Background -- System Command **qwlab**

The programs invoked through this menu are used to:

- (a) transfer laboratory analysis data and laboratory accounting data from the computer at the USGS National Water-Quality Laboratory (NWQL) facility in Arvada, Colorado, and
- (b) process the accounting data.

Most of the output file names generated by the programs in this subsystem are qualified by the system date and time when the programs are initiated. In the subsequent discussion of the programs, the following format will be used to identify the file names:

filename.yymmdd.tttt

where:

1. "*filename*" is the major identification portion of the file name and will vary from program to program.
2. "*yymmdd*" is the system date in 2-digit-year (yy), 2-digit-month (mm), and 2-digit-day (dd) format.
3. "*tttt*" is the system time in 4-digit, 2400-hours format.

Access to the **qwlab** subsystem should be limited to the person(s) in your District who is assigned the task of retrieving the results of laboratory analyses and maintaining a record of laboratory charges. The programs in **qwlab** may be invoked by selecting them from a menu displayed at the terminal by the command:

qwlab

In response to the command, the following menu is displayed:

```
QW LAB PROCESSING ROUTINE REV NWIS(version no.)+YYYYMMDD
YOU ARE USING WATER-QUALITY DATA BASE NUMBER (Data Base currently
being used)

LAB OPTIONS
 1 -- GET LAB DATA FROM CENTRAL LAB
 2 -- RUN LABWEEK TO GET LAB COST
 3 -- RUN LABCOST TO GET BUDGET
 4 -- RUN LABPURGE TO ZERO BUDGET FILE
 99 -- EXIT TO SYSTEM

Please enter a number from the above list or a Unix command:
```

Figure 7. Lab Programs menu

While in the Bourne shell script, UNIX commands such as **ls** or **more** can be used to look at file names or list a file. At the conclusion of each selected program, the above menu is redisplayed until 99--EXIT TO SYSTEM is selected. The options for the functions are given in the following sections.

3.1 Option 1 -- Retrieve National Water-Quality Laboratory Data (/usr/opt/nwis/bin/qwgetlab)

Option 1 invokes the **qwgetlab** program as an interactive process. The NWQL sends completed laboratory data to the District server when available. When invoked, the **qwgetlab** program searches for the lab data, and moves the files from where they were received to the directory in which you are attached.

After selecting option 1, the program displays the following:

```
qwgetlab initiated:<date/time/year>
Working in directory: <pathname of directory to which you are
currently attached>
```

Enter user/district code if required:

For Districts with multiple codes, enter the user/district code to be retrieved.

The **qwgetlab** program moves the card images from the */var/ftp/incoming/.wrd_only/nwis.nwql* directory to your working directory, and renames them to a file named *qwcards*. If a file named *qwcards* already exists in the directory, the name of the existing file is changed to *qwcards.yymmdd.hhmmss*. If there are multiple files from the laboratory, the additional files are appended. A file named *qwgetlab.como* is produced showing the results of the **qwgetlab** program.

Examine the *qwgetlab.como* file. As part of the NWQL transfer process, a checksum value is added to the transferred file name. The **qwgetlab** program compares this value shown in the name with a new calculation of the checksum value. If these values are not the same, the file was not transferred correctly and will not be added to the *qwcards* file. If this occurs, contact the NWQL so the file in question can be retransmitted. An example of the *qwgetlab.como* output is in section 3.1 of Appendix D.

The **qwgetlab** program also may be invoked by entering the command: **qwgetlab**
There are four arguments that may be supplied to the command:

- u user/district code, if any is required. Sites with multi-user/district codes should specify the code with which they want to work. If no code is specified, all user/district codes will be merged into one set of qwcards.
- w working directory (generally a directory under */usr/opt/nwis/data/auxdata*)
- p processing program (**qw_cardsin**/**qw_enter**) if processing is desired
- d data base number (for districts with multiple water quality files, default is 01)

You may have the **qwgetlab** program move the data to the working directory and then process the data using either the **qw_cardsin** program or the **qw_enter** program,

described in sections 4.1 and 4.2. Output from the **qwgetlab** program and from the processing programs are written to the directory specified with the **-w** option.

3.2 Option 2 -- Process Laboratory Accounting Records

(/usr/opt/nwis/bin/qwlabweek)

The file *qwcards*, created by Option 1 of the **qwlab** menu, contains accounting records for Laboratory charges. The accounting records are subset from the analytical data by the program(s) (**qw_cardsin** or **qw_enter**) used to enter the analytical data into the water-quality file and saved in the directory */usr/opt/nwis/data/watsave* with the file name of *qwacntng.yymmdd.ttt* and *qwacntng.qwenter.yymmdd.ttt* if **qw_enter** was used. (See secs. 4.1 and 4.2 for discussion of processing analytical data.)

When OPTION 2 -- RUN LABWEEK TO GET LAB COST is selected, the **qwlabweek** program is invoked as an interactive process. Your input to **qwlabweek** consists of responding to prompts for: (a) the program used to process the analytical data, and (b) the date and time the program was run. The requested information can be found by looking at the *qwacntng.** file names in the directory */usr/opt/nwis/data/watsave*. The *qwacntng.** files end in the date.time that the program was run. File names created by **qw_cardsin** follow the format *qwacntng.yymmdd.ttt*; file names created by **qwenter** follow the format *qwacntng.pgmname.yymmdd.ttt* (see example below). The **qwlabweek** report file is written to the startup directory and follows the format *labweek.yymmdd.ttt*. After the **qwlabweek** report has been printed, the file may be deleted.

Example of **qwlabweek** for file /usr/opt/nwis/data/watsave/
qwacntng.qwenter.97042ccntng

WHICH PROGRAM WAS USED TO INPUT YOUR LAB DATA?

C -- *qwcardsin*
E -- *qwenter*

PLEASE ENTER C OR E: e

PLEASE ENTER THE DATE [YYMMDD] AND TIME [HHMM] THE JOB WAS RUN

YYMMDDHHMM
9704221243

ACCOUNTING INPUT FILE IS : /usr/opt/nwis/data/watsave/
qwacntng.qwenter.970422.ntng.qwenter.970422.1243
LABWEEK REPORT FILE IS : *labweek.970811.1041*

STOP: LABWEEK FINISHED

The **qwlabweek** output includes the laboratory identifier, project account number or name of the Federal program (BENCHMARK, NASQAN), cost of the analysis, station number, date, time, and schedules requested for each analysis. Total costs per project are included at the bottom of the output for that **qwlabweek** retrieval. The information provided in the **qwlabweek** output should be used only as an estimate of laboratory charges

that a project incurs because some charges do not appear in the output. For example, a charge for materials (M card) is transmitted to Headquarters for billing, but is not transmitted to the Districts.

Lab accounting information can be retrieved from the following National Water Quality Laboratory Web page: <http://wwwnql.cr.usgs.gov/USGS/customer/customer.html>

3.3 Option 3 -- Accounting Information (year-to-date)

(/usr/opt/nwis/bin/qwlabcost)

Option 3, the **qwlabcost** program prepares a report of lab costs to the current date for a user-selected fiscal year. The report includes account numbers, expenditures for each account, and the number of analyses for each account; plus a total cost for District and Network analyses. You are queried for the 4-digit fiscal year and for the name of a file to hold the report.

The project costs that appear on the **qwlabcost** output should be used only as an estimate of laboratory charges. Some charges are not sent to the Districts. For example, a charge for materials (M card) is sent to Headquarters for billing, but is not transmitted to the Districts.

3.4 Option 4 -- Purging Accounting File

(/usr/opt/nwis/bin/qwlabpurge)

Option 4, the **qwlabpurge** program, deletes all the records for a specified fiscal year from the Lab Accounting File. [It is neither necessary nor desirable to retain these records online after the fiscal year closeout.] You are queried for the 4-digit fiscal year; the selected records are copied to the sequential file in the watsave directory before being deleted. The name of the output file, *labacct.yr*, is supplied by the program and printed for the user; it is prudent to back up this file on tape in case the records are needed later.

4 Water-Quality Programs--Interactive and Background --System Command **qwsystem**

The programs invoked through the **qwsystem** menu are used to:

1. Enter Water-Quality Laboratory analyses into the Water-Quality File
2. Enter non-USGS data into the Water-Quality File
3. Transfer completed, approved analyses to the Water-Quality File
4. Retrieve records from Water-Quality File and output 1 and * cards
5. Change or delete site ID's
6. Change data-base numbers
7. Process special-purpose retrievals
8. Enter quality-assurance (QA) data for samples logged into the QA file
9. Enter QA data for samples not logged into the QA file

Most of the output file names generated by the programs in this subsystem are qualified by the system date and time when the programs are initiated. In the subsequent discussion of the programs, the following format will be used to identify the file names:

filename.yymmdd.tttt

where:

1. "*filename*" is the major identification portion of the file name and will vary from program to program.
2. "*yymmdd*" is the system date in 2-digit-year (yy), 2-digit-month (mm), and 2-digit-day (dd) format.
3. "*tttt*" is the system time in 4-digit, 2400-hours format.

Access to the **qwsystem** subsystem should be limited to the person(s) in your District who is assigned the task of entering the results of laboratory analyses into the Water-Quality File.

The programs in **qwsystem** may be invoked by selecting them from a menu displayed at the terminal by the command:

qwsystem

In response to this command, the menu shown in figure 8 is displayed. An alternate menu for these programs, **qwdbamenu**, is described in section 7.2, Alternate Menus.

While in the Bourne shell script, UNIX commands such as **ls** or **more** can be entered to look at file names or list a file. At the conclusion of each selected program, the above menu is redisplayed until **99-EXIT TO SYSTEM** is selected. The options for the functions are given on the following pages.

```
QWSYSTEM ROUTINES REV NWIS (version no.)+YYYYMMDD
SYSTEM OPTIONS
YOU ARE USING WATER-QUALITY DATA BASE NUMBER 01
1 -- RUN QWCARDSIN TO PROCESS LOGGED IN SAMPLES
2 -- RUN QWENTER TO PROCESS SAMPLES NOT LOGGED IN
3 -- RUN QWSTORET TO UPLOAD DATA TO EPA STORET
4 -- RUN QWFIXED TO PRODUCE 1 AND *-CARD OUTPUT
5 -- RUN STNCHANGE TO CHANGE STATION NUMBER
6 -- MPACK QW FILE FOR SELECTED DATABASE
7 -- CHANGE DEFAULT DATA-BASE NUMBER
8 -- MAKE ALERT LIMIT TABLE FROM WATLIST
9 -- RUN QACARDSIN TO PROCESS LOGGED IN QA SAMPLES
10 -- RUN QAENTER TO PROCESS SAMPLES FOR QA FILE
99 -- EXIT TO SYSTEM
```

Please enter a number from the above list or a Unix command:

Figure 8. System Programs menu

4.1 Option 1 -- Enter National Water-Quality Laboratory Data (/usr/opt/nwis/bin/qw_cardsin)

The **qw_cardsin** program is a FORTRAN (F77) program that updates records with analytical data from the National Water-Quality Laboratory (NWQL) in Arvada, Colorado. The analytical data are transferred (along with lab charges/accounting data) from the laboratory into a fixed-format, card-image file, which is used as input to **qw_cardsin**. Prior to execution of **qw_cardsin**, **qwgetlab** (sec. 3.1) should be invoked to transfer the analytical data into the proper file (*qwcards*) on your District's Prime computer.

The **qw_cardsin** program is invoked from the **qwsystem** menu (using the **qw_cardsin** Bourne shell script) as a background process. For this process to execute successfully, the data must be in the file *qwcards* in the directory from which the **qwsystem** menu is invoked. If the data are not in the correct file (*qwcards*) in the current directory, the program attempts to write the following message to the terminal:

```
SORRY, THE FILE QWCARDS DOES NOT EXIST IN THIS DIRECTORY. ATTACH TO
THE DIRECTORY CONTAINING QWCARDS OR COPY THE FILE TO THIS DIRECTORY
AND TRY AGAIN.
```

The data in the input file (*qwcards*) are transferred from the lab in sets of card-images. A set of card-types (1, *, 5, 7, X, M, and #) contains the information to describe each analysis and is interpreted by **qw_cardsin** to create a water-quality update record. An entry for each analysis must already exist in the water-quality file on your system. (See sec. 2.1 -- **qwlogin**.) **qw_cardsin** will not create water-quality records; its function is to locate

water-quality records in the file and add the laboratory determinations to the existing records. Following is a description of each of the card types used to identify an analysis:

Card-type 1 contains the information describing the water-quality record header (site ID, medium code, collection dates and times, and sampling codes.) A complete description of the 1 card format can be found in section 4.2.

Card-type * contains the lab determinations for each of the parameter codes and any associated qualifiers (remarks, quality assurance codes, laboratory method codes, and precision codes). The data are in a fixed-field format with two parameter code sets per card. A complete description of the *-card format can be found in section 4.2. Valid remark, quality-assurance, and method codes are listed in Appendix A. Method codes are listed in Appendix C.

Card-type 5 contains any comments to the lab that were coded on the Request for Analytical Services form.

Card-type 7 contains any comments from the lab concerning the analysis.

Card-type X contains a parameter code, a parameter value, and a message code. The format of the X card is an X in column 1, parameter code in columns 3-7, laboratory method code in columns 8-10 (enclosed in parentheses), equal sign in column 11, and message code in column 12. Several message codes (up to 7) within one X card may appear, replicating the format in columns 3-12. The total record length of the X card is 72. The message codes are in table 4:

Table 4. Message codes for card-type X

A	-- run by Alternate method	P	-- sample discarded, improper Preservation
B	-- sample Broken/spilled in shipment	R	-- sample Ruined
D	-- requested by District or project	U	-- Unable to determine, interference
F	-- improper Filter used	W	-- sample discarded, Warm when received
H	-- pH greater than 7.0	X	-- lab code 586 was reported as O
I	-- required sample type not received	Z	-- lab code 588 was reported as O
M	-- results sent by separate Memo	L	-- Low surrogate recovery
O	-- insufficient amOunt of water		

Card-type # contains the project account number, a list of the schedules used, and the cost of the analysis.

The *qwcards* file also contains laboratory accounting data on card-types D, M, N, and A. The D- and N-type cards contain information on the charges against District and Network accounts, respectively. The M (material, e.g., bottles, supplies) and A-type cards identify Laboratory charge adjustments. The formats are shown in the following three tables.

Table 5. Format of the # card for the District and Networks

Column	Identifier
1	#
2 - 10	Account Number
11 - 20	Cost
21 - 74	Schedules used

Table 6. Format of the D and(or) N card for the District and Networks

Column	Identifier
D1 or N1	
1	D or N
2	1
3 - 9	Laboratory Identification
10 - 24	Station Identification
25 - 30	Date
31 - 34	Time
35 - 36	District Code
37	Blank
38 - 46	Project Identification or Type of Network
47 - 54	Cost (right-justified)
55	Q
56 - 63	Blank
64 - 67	Third through seventh numbers of station ID
69 - 74	Schedules used
D2 or N2	
1	D or N
2	2
3 - 9	Laboratory Identification
10-49	Schedules requested

Table 7. Format of the M card for the District and Networks

Column	Identifier
1	M
2	1
3 - 9	Type of adjustment
10 - 24	How sent
25 - 30	Date
35 - 36	District Code
37	Blank
38 - 46	Account number
47	-
48 - 54	Adjustment cost
55 - 79	Blank
80	1

Selected examples of the D, N, and M cards are as follows:

D10170099390446119451401970116114032	473200300	152.13Q	4		
D20170099866	452				
D12680359385557120015101950921120032	473216700	759.51Q	4		
D2268035927502703					
N1311016210244950	951101102032	BENCHMARK	256.30Q	24490176326	4
N23110162176					
M1CREDIT RETURN MAIL	950809	39	443900300-	41.33	
M2CREDIT					

If an alternate data base called qafile has been established on your system, all analyses with a medium code of Q-Z are separated into a file called *qacards*. The qafile data base is a special data base for quality-assurance data, and medium codes Q-Z represent quality-assurance samples. After the cards are separated, the **qa_cardsin** program is initiated to input the *qacards* file into qafile. Additional *watlist* and *badqw* files (described below) are generated. The details of the quality-assurance data and data base are in section 6.

The output files generated by **qw_cardsin** are:

watlist.yymmdd.ttt, which contains: 1) a list of the records that were updated, 2) a cation-anion balance table and a balance if one can be computed, and 3) a list of any error messages generated for each analysis. An example of the *watlist* report is included in section 4, Option 4.1, of Appendix D. The alert messages have been modified in anticipation of an improved alert reporting system. Alert messages will include the appropriate code: DW for Drinking Water, AQ for AQuatic, or REC for RECreational standards.

badqw.yymmdd.ttt is an error file, which contains the input-card sets for any transactions that could not be processed. These transactions normally include: (1) invalid card-types, (2) card sets for analyses that have invalid site ID's, dates/times, and/or medium codes, (3) card sets for analyses that have not been logged in, and (3) A-card transactions. The *badqw* file should be reviewed after every run of the program. If the file contains any data cards, the necessary steps should be taken to correct any errors on the cards and to login any new analyses that should be stored in your file. The *qwcards* file may be deleted, *badqw* file renamed to *qwcards*, and the program rerun to process the corrected data.

qwcacctng.yymmdd.ttt is created in the *watsave* directory. This file contains the accounting records that were previously processed on the Amdahl computer by Procedure **labweek**. This file is used as input to the NWIS program **labweek**, which maintains the accounting information for NWQL charges (sec. 3.2).

qw_cardsin.como is a command output file generated in the current directory. This file should be checked when **qw_cardsin** has ended to verify successful completion.

4.2 Option 2 -- Update Water-Quality File

(/usr/opt/nwis/bin/qw_enter)

The **qw_enter** program is a FORTRAN (F77) program that may be used to enter laboratory analytical data into the Water-Quality File, create new records and add data from non-USGS sources to the Water-Quality File, and perform limited data editing functions as described subsequently.

Although this program may be used to enter NWQL data into the Water-Quality File without previously logging in the samples, choosing this method of creating records is not recommended because it sacrifices a measure of control over the data. If identification fields (site ID, date/time, medium code) are entered erroneously by the laboratory, the error may not be recognized until much later, when properly identifying the records may be difficult and time-consuming. Moreover, if you wish to identify records with project identifiers or to take advantage of the TYPES OF ANALYSES field in **qwloglist** output, the records must be edited to insert the appropriate information. (sec. 2.2.3 -- Edit Sample Records).

The **qw_enter** program is invoked from the **qwsystem** menu using the **qw_enter** Bourne shell script as a background process. For this process to execute successfully, the data must be located in the file *qwcards* in the directory from which the **qwsystem** menu is invoked. If the data are not located in the default file (*qwcards*) in the current directory, the program attempts to write the following message to the terminal:

```
SORRY, THE FILE QWCARDS DOES NOT EXIST IN THIS DIRECTORY. ATTACH TO
THE DIRECTORY CONTAINING QWCARDS OR COPY THE FILE TO THIS DIRECTORY
AND TRY AGAIN.
```

If **qw_enter** is used to input USGS Laboratory analyses, the input cards are stored in the format described under the previous section (4.1, Option 1 -- Enter National Water-Quality Laboratory Data). No changes to the card images transferred from the lab are required. If the data are from a non-USGS source, or consist of edit transactions created by a user, the format of the input records should follow the guidelines shown in table 8. Input records should not exceed the maximum of 250 parameter values that can be entered for each record.

4.2.1 Prepare 1-Card Transactions

Table 8. Instructions for preparing 1-card transactions

Column	Identifier
1	Card type (1)
2-16	Station number
17	Medium code
18-27	Begin date and time
18-19	Begin year, last 2 digits
20-21	Begin month, use leading zeros
22-23	Begin day, use leading zeros
25-27	Begin time (2400-hours system, use leading zeros)
28-35	End date and time
28-29	End month, use leading zeros

Table 8. Instructions for preparing 1-card transactions--Continued

Column	Identifier
30-31	End day, use leading zeros
32-35	End time (2400-hours system, use leading zeros)
36-43	Geologic unit code
44	Analysis status code
45	Analysis source code
46	Hydrologic condition code
47	Sample type code
48	Hydrologic event code
49-51	BLANK
52-53	May be left BLANK. If so, the program will assume 19 if the year coded in columns 18-19 is 50 or more, and will assume 20 if the year is 49 or less
54-61	BLANK
62-63	Data category (all values default to QW)
64-68	Agency code (optional, default = USGS)
69-75	BLANK
76	District processing status (valid values in qw_enter) are: P - (lab and field data, under review) R - (approved by District, ready to be transmitted to Reston) Z - local-use data, do not transmit to Reston Note: A blank or invalid value for processing status defaults to R
77-80	BLANK

The only mandatory fields on the 1-card are station number, medium code, and collection date. If non-USGS data are to be entered, a valid agency code should be entered in the Agency Code field (columns 64-68).

A water-quality record may be deleted from the file by entering DELETE in the Geologic Unit Code field. This may be useful for deleting several records, thus saving some time. A possible way for doing this type of deletion would be to run the **qwfixed** option for the stations to be deleted. Once the file of 1- and *-cards is created, the file needs to be reduced down to just a file of 1-cards. Once that is done, use an editor of choice and add the word DELETE in the correct column. **qw_enter** or **qw_cardsin** can then be used to delete the analysis using the file just created.

4.2.2 Prepare *-Card Transactions

The format of the *-card for **qw_enter** is described below.

Table 9. Instructions for preparing *-card transactions

Column	Identifier
1	Card type (*)
2-76	Free-field format for parameter description

The format of the parameter description is: Pnnnnn = value (R:Q:M:P)

where:

nnnnn = a valid 5-digit parameter code as contained in the WRD Parameter Code Dictionary.

value = the measurement for or analytical determination of the constituent identified by the parameter code. Fixed values for certain parameters are listed in Appendix B.

R = the Remark code qualifying the parameter value. Remark codes are listed in Appendix A.

Q = the Quality assurance code for the parameter value. Quality assurance codes are listed in Appendix A.

M = the Method code identifying the USGS Central Laboratory method used to determine the parameter value. Valid method codes are listed in Appendix C.

P = the Number of significant digits to be used for printing the parameter value.

The values for parameter codes, parameter values and qualifiers (R, Q, M, and P) may be coded free-format within the indicated delimiters; that is, intervening blanks are allowable but not required. Values for qualifiers are optional, but positional, from left to right within the () delimiters if entered. The delimiters, (::) are mandatory to identify the position of qualifiers only if qualifier values are entered. Commas separate the values and corresponding qualifiers. The last parameter in the set has no commas.

Example:

col.	1	2	3	4	5	6
	123456789012345678901234567890123456789012345678901234567890					
	*P00010 = 15, P00020=15, (::), P00025=15(<::M)					

would be interpreted by **qw_enter** as a value of 15 for parameter code 00010, with no values for remark and method code, and default values for quality assurance and precision. The parameter and qualifier values for parameter code 00020 would be interpreted identically to the values for parameter code 10. The third set of values would be interpreted as a value of 15 for parameter code 00025, with a remark of "<", default values for quality assurance and precision, and a value of M for method.

In addition, an exponential format can be used for the * card. This format is somewhat similar with regard to the free-field input and the qualifiers within the (). However, the values are expressed as exponents.

Example:

col.	1	2	3	4	5	6
	123456789012345678901234567890123456789012345678901234567890					
	*P00010= 0.1500E+02, P00095= 0.5800E+03(<:::)					

would be interpreted by **qw_enter** as a value of 15 for parameter code 00010, with no values for remark and method code, and default values for quality assurance and precision. The second set of values would be interpreted as a value of 580 for parameter code 00095, with a remark of "<", default values for quality assurance and precision, and no value for method.

Valid values for parameter qualifiers are listed in Appendix A, and method codes are listed in Appendix C. Default values for parameter precision are determined by the Parameter Code Dictionary.

An existing parameter code may be deleted in **qw_enter** by entering the parameter code with no value on the *-card. (The "=" and "," delimiters are required to indicate no value.)

Example: *P00010= ,

would cause parameter code 00010 to be deleted from a water-quality record. For compatibility with the Amdahl water-quality processing system, a parameter code also may be deleted in **qw_enter** by entering an X in the remark code field.

If an alternate data base called qafile has been established on your system, all analyses with a medium code of Q-Z are separated into a file called *qacards*. The qafile data base is a special data base for quality-assurance data, and medium codes Q-Z represent quality-assurance samples. After the cards are separated, the **qa_enter** program is initiated to input *qacards* into qafile. Additional *watlist* and *badqw* files (described below) are generated. The details of the quality-assurance data and data base are contained in section 6.

The output files created by the **qw_enter** program are as follows:

watlist.qw_enter.yymmdd.tttt, which contains: 1) a list of the records that were updated, 2) a cation-anion balance table and a balance if one can be computed, and 3) a list of any error messages generated for each analysis. An example of the *watlist* report is included in section 4, Option 4.2, of Appendix D. The alert messages have been modified in anticipation of an improved alert reporting system. Alert messages will include the appropriate code: DW for Drinking Water, AQ for AQuatic, or REC for RECreatational standards.

badqw.qw_enter.yymmdd.tttt is an error file which contains the input-card sets for any transactions that could not be processed. These transactions normally include: (1) invalid card-types, (2) card sets for analyses that have invalid site ID's, dates/times, and/or medium codes, and (3) A-card transactions. The *badqw* file should be reviewed after every run of the program. If the file contains any data cards, the necessary steps should be taken to correct any errors on the cards so that analyses that should be stored in your file may be processed. The *qwcards* file may be deleted, the *badqw* file renamed to *qwcards*, and the program rerun to process the corrected data.

qwacctng.qw_enter.yymmdd.tttt is created in the watsave directory. This file contains the accounting records previously processed on the Amdahl computer by Procedure **labweek**. This file is used as input to the NWIS program **qwlabweek**, which maintains the accounting information for NWQL charges.

A command output file called *qw_enter.como* is generated in the current directory. This file should be checked when the **qw_enter** Bourne shell script has ended to verify successful completion.

4.3 Option 3 -- Process Updates to the Environmental Protection Agency's Storage and Retrieval System

(/usr/opt/nwis/bin/qwstoret)

The **qwstoret** program (Option 3 on the **qwsystem** menu) is used to prepare completed and approved analyses for transfer to the Environmental Protection Agency's (EPA's) Storage and Retrieval System (STORET) (sec. 2.2.4 -- Flag Approved Samples). This Bourne shell script invokes a FORTRAN (F77) program (*/usr/opt/nwis/bin/qwepaout*), which selects records flagged as "ready to transmit," retrieves the data, and writes the data to a file. The selected records are flagged as "transmitted (t)" and the file is ready for transmission to EPA. Three file names are "hard coded" in the program:

The file, *epa.records*, contains a list of the sample record numbers that were marked as "ready to transmit." Once the program has finished, these record numbers will be marked "transmitted." The file will be overwritten the next time the program is run.

The update report from **qwepaout**, *qwstoret.como.yymmdd.hhmmss*, is generated in the directory from which the **qwsystem** menu is invoked. This file contains a count of the number of records that were selected for transmittal to the Water-Quality File. This file should be reviewed for error messages and to ensure that it says processing is complete.

The output file, *qwup.epa.yymmdd.hhmmss*, contains the updates in a format to be submitted to EPA. A technical memorandum will provide instructions on how the actual update will be performed.

An example of typical output from **qwstoret** is included below:

```
-----
Upload QW data to storet, running program qwepaout
Processing initiated: 971215.142638
You are using water-quality database 01

Program qwepaout

Build file of QW data for uploading to EPA STORET
  QW DATABASE PATHNAME IS : /usr/opt/nwis/data/midas/db01/qwfile

Searching for records flagged as ready to transmit ...

Processing complete.    193 records written

Transfer file available in: qwup.epa.971215.142638
Log file available in: qwstoret.como.971215.142638
-----
```

The format of the water-quality record for transfer to STORET follows:

Column(s) Description

1	Reserved Space
2-16	Station Number
17-20	Begin Year
21-22	Begin Month
23-24	Begin Day
25-28	End Year
29-30	End Month
31-32	End Day
33-36	Begin Time
37	Medium Code
38-40	County Code
41-42	State Code
43-44	District Code
45-52	Geologic Unit Code
53-58	Latitude
59-65	Longitude
66-67	Lat-Long Sequence Number
68-72	Agency Code
81-88	Hydrologic Unit Code
89-90	Create Date
91-92	Sequence Number
93-129	Station Name (Local well number)
130	Analysis Status Code
131	Analysis Source Code
132	Hydrologic Condition Code
133	Sample Type Code
134	Hydrologic Event Code
135-138	End Time
139-142	Comments
143-145	Number Constituents

The following items are repeated for each constituent:

146-150	Parameter Code	(1-5)
151-160	Constituent Value	(6-15)
161	Remark Code	(16)
162	Quality Assurance Code	(17)
163	Method Code	(18)
164	Precision Code	(19)

4.4 Option 4 -- Produce 1- and *-Cards

(/usr/opt/nwis/bin/qwfixed)

The **qwfixed** program retrieves selected records from the Water-Quality File and outputs the data in 1- and *-card format. The format is described in section 4.2. The records to be retrieved are identified by a list of record numbers, which is read from an input file. The parameter data in the *-cards may include all stored values or may be limited to a list of parameter codes at your option. The card-images for the selected records and parameter values are written to a user-supplied file. Input and output files accessed by **qwfixed** should be located in the directory from which **qwfixed** is invoked. Other directories may hold the input file and the output file can be written to another directory. However, a limit of 32 characters prevents long paths for inputting or outputting card images.

When Option 4 on the **qwsystem** menu is selected, the program displays the following prompt:

```
PLEASE ENTER NAME OF FILE THAT HAS THE RECORD NUMBERS (99 TO END)
```

>

and waits for the file name to be input. When the input file has been identified and opened, the following prompt is displayed:

```
PLEASE ENTER NAME OF FILE TO HOLD THE OUTPUT
```

>

and the program waits for the file name to be input. If the output file already exists in the current directory, you have the options of (1) selecting another output file, (2) overwriting the existing file, or (3) appending the data to be retrieved to the end of the existing file. After the file of record numbers and the file to hold the output have been successfully located and opened, **qwfixed** prompts:

```
DO YOU WANT TO RETRIEVE ONLY SELECTED PARAMETERS (YES OR NO)?
```

```
**PLEASE NOTE: NUMERIC PARAMETERS ONLY.**
```

A NO causes the program to begin the retrieval process for all parameters stored in the records identified in the input file. A YES causes the program to prompt for the source of the input parameters. The parameters may be input interactively from the terminal or from a parameter list input file. When the input parameters have been read, the retrieval process begins and the following messages are displayed:

- (1) Processing records... Please wait
- (2) qwfixed processing completed
- (3) Your output is in file (output file name)
- (4) STOP: QWFIXED ENDED

When the **qwfixed** program has ended, the **qwsystem** menu is redisplayed.

4.5 Option 5 -- Change Station Numbers

(/usr/opt/nwis/util/stnchange)

Program **stnchange** was written and is maintained by the GWSI work group. Instructions for using this program are located in the directory: */usr/opt/nwis/doc* with the name “*stnchange.ps*” and will not be repeated here.

The **stnchange** program allows either deleting or changing a station number. The station number is the primary key used to identify locations approved for WRD data collection. An entry in the Site File is required for data stored in the NWIS data bases. Updates that affect a station number are to be applied not only to the Site File, but also to associated data bases (QW, GW, ADAPS, and/or Water Use) where data for the site exist. If program **stnchange** is used to delete a station number in the Site File, the NWIS data bases are searched and data located in the NWIS that are identified as collected at that site will be deleted. The delete transaction in the NWIS is an immediate, physical delete. The only way to recover deleted records is by reentering them. An update to a station number is also performed in the Site File and the associated data bases. Because the updates performed by **stnchange** have the possibility of affecting data in the NWIS and the national data bases, this function should be closely coordinated and monitored within your District.

4.6 Option 6 -- Packing a MIDAS File

(/usr/opt/nwis/util/mpack.check)

This function is no longer valid. When selecting option 6 the following message is displayed:

Function (MPACK) not avail, press <CR> to continue:

4.7 Option 6 -- Change Data-Base Number

(/usr/opt/nwis/util/mod.user_dbn_def)

This independent option, **mod.user_dbn_def**, was written by the Ground-Water Site Inventory work group, and is used to change your default data-base number. When the program is invoked, a submenu (see below) appears from which to select the appropriate option.

```
Program MOD.USER_DB_DEF
Program to allow user to modify data-base numbers
Possible actions:
1. List public data bases at this site.
2. List my current data-base numbers.
3. Change data-base number for GWSI only.
4. Change data-base number for QW only.
5. Change data-base number for GWSI and QW.
6. Exit routine to change data-base numbers.

Choose Action:
```

Figure 9. Change Data-Base Number submenu

When you select option 1 from the submenu, the program accesses a file called *site.dbn.def* located in the */usr/opt/nwis/support* directory. This file is modified appropriately by individual Districts for their specific use. The following is an example of the *site.dbn.def* file:

```
* This file described the public data bases available at this
* site. Not all data bases need to be included here--it is
* just for the user's information when the user wants to
* change data-base numbers. This file is not checked for
* valid numbers nor does an entry here mean the user has
* access to the data base.
*
* A comment starts with an "*" and will not be displayed to the user.
*
* Use any editor to update this ASCII file. If done from the menu,
* the editor specified in your NWIS EDITOR environment variable
* will be used. If you have not set this variable, then vi will be
* selected for you.
*
Data Base #01 - Standard data base for this site.
```

The DBA must modify this file by adding to the end of the file the appropriate data-base number and a brief description of that data base.

Selecting option 2 of the submenu displays the current GW and QW data bases you are accessing. Options 3, 4, and 5 modify the */usr/opt/nwis/support/user.dbn.def* file and allow you to change the data base used. To exit the program, select option 9.

4.8 Option 8 -- Produce an Alert Limit Table

(*/usr/opt/nwis/bin/qwalert*)

The **qwalert** program produces a Drinking Water Alert Limit table from analyses retrieved from the Central Laboratory. The program uses the output generated from Options 1 or 2 in the **qwsystem** menu and writes out pertinent information, e.g., Station Name, Station ID, Date, Time, and the parameter codes that had values exceeding the Drinking Water Alert stored in the Parameter Code Dictionary. Option 9 on the **qwsystem** menu displays the following prompt:

```
PLEASE ENTER NAME OF INPUT FILE : (Generally a watlist file)
PROGRAM ALERT HAS OPENED FILE (the name given to the program)
PLEASE ENTER NAME OF FILE TO HOLD THE OUTPUT: (File named by DBA)
***** STOP
```

An example of the output from the **qwalert** program is shown below:

```

STATION NAME= Fake Station to Test Programs
DATE= 09-01-1988 AT 0835
SITE ID= 01123456          RECORD NUMBER= 98800123
HYD. CONDITION= Stable, Normal stage   HYD. EVENT = Routine sample
MEDIUM = Surface water

*****
PARAMETER 00950  VALUE      5.0  EXCEEDS DW ALERT LIMIT OF    4.000
1  [ FLUORIDE DISSOLVED (MG/L AS F)           ]
PARAMETER 01075  VALUE     210  EXCEEDS DW ALERT LIMIT OF  50.000
2  [ SILVER DISSOLVED (UG/L AS AG)           ]
PARAMETER 01145  VALUE     240  EXCEEDS DW ALERT LIMIT OF 10.000
3  [ SELENIUM DISSOLVED (UG/l AS SE)          ]
*****

```

4.9 Option 9 -- Process Logged In Quality Assurance Samples (/usr/opt/nwis/bin/qa_cardsin)

The **qa_cardsin** program is a FORTRAN (F77) program that may be used to enter laboratory analytical data into a Quality Assurance (QA) Data File. The quality-assurance data along with the environmental samples are usually transmitted from the NWQL to the districts. The data are separated into two distinct files, depending on the medium code, and are processed. The environmental samples are entered into the regular data base and the QA data are entered into the QA data base. This program is similar to Option 1 of this submenu.

If a user needs to store data into the QA data base and the data do not come from the NWQL, the analyses to be entered must have been logged in previously.

Caution: This program is designed to enter data into a QA data base. The user must ensure that the data-base number currently being worked in is the correct one for the QA data base. Otherwise, the data will be entered into the data base currently assigned to the user.

The **qa_cardsin** program is invoked from the qwsystem menu using the **qa_cardsin** Bourne Shell Script as a background process. For this process to execute successfully, the data must be in the *qacards* file in the directory from which the qwsystem menu is invoked. The output from this program is similar to Option 1 in the qwsystem menu. The output file names are:

WATLIST.QA.yymmdd.tttt, which contains: 1) a list of the records that were updated, 2) a cation-anion balance table and a chemical balance if the balance can be computed, and 3) a list of any generated error messages.

badqw.qa.yymmdd.tttt is an error file that contains the input-cards sets for any transactions that could not be processed.

For additional information on quality-assurance data and the use of a quality-assurance data base, refer to Section 6.

4.10 Option 10 -- Update Quality Assurance File

(/usr/opt/nwis/bin/qa_enter)

The **qa_enter** program is a FORTRAN (F77) program that may be used to enter laboratory analytical data into a Quality Assurance (QA) data file, create new records and add data from non-USGS sources to the QA File, and perform limited data editing functions, as described below. This program is similar to Option 2 of this submenu.

Caution: This program is designed to enter data into a QA File. The user must ensure that the data-base number currently being worked in is the correct one for the QA File. Otherwise, the data will be entered into the data base currently assigned to the user.

The **qa_enter** program is invoked from the **qwsystem** menu as a background process. For this process to execute successfully, the data *must* be located in the *qacards* file in the directory from which the **qwsystem** menu is invoked.

The output from this program is similar to Option 2 in the **qwsystem** menu. The output file names are:

watlist.qa_enter.yymmdd.tttt, which contains: (a) a list of the records that were updated, (b) a cation-anion balance table if the balance can be computed, and (c) a list of any generated error messages.

badqw.qa_enter.yymmdd.tttt is an error file that contains the input-card sets for any transactions that could not be processed.

For additional information on quality-assurance data and the use of a quality-assurance data base, refer to Section 6.

5 Interactive Graphic Programs --System Command **qwgraph**

The programs in the QWGRAPH menu may be invoked by entering the command:

qwgraph

and the following menu is displayed:

```
QW GRAPHIC ROUTINES      REV NWIS(version no.)+YYYYMMDD
YOU ARE USING WATER-QUALITY DATA BASE NUMBER 01
GRAPHIC OPTIONS
1 -- CREATE AN X,Y PLOT      6 -- CREATE REGRESSION PLOTS
2 -- CREATE BOXPLOTS         7 -- CREATE FLATFILE OUTPUT
3 -- CREATE A STIFF DIAGRAM   8 -- SUMMARY STAT. TABLE (PERCENTILES)
4 -- CREATE A PIPER DIAGRAM    9 -- DETECTION LIMITS TABLE
5 -- TIME SERIES PLOTS       10 -- STATISTICS PLOTS
99 -- EXIT TO SYSTEM
Please enter a number from the above list or a Unix command:
```

Figure 10. Graphic Programs Menu

While in the Bourne shell script, UNIX commands such as **ls** or **more** can be entered to look at file names or list a file. At the conclusion of each selected program, the above menu is redisplayed until **99 -- EXIT TO SYSTEM** is selected. The options for the functions are given on the following pages.

5.1 Option 1 -- X,Y Plot (**/usr/opt/nwis/bin/qwplot**)

Option 1, the **qwplot** program, creates an X,Y plot stored in a binary file for use in post-processor programs. The data are plotted either as symbols or a line plot with a symbol placed at the points. All data are used in the plot, including remarked (i.e., less or greater than) values. After the program is invoked, a brief screen message is displayed and it asks for the name of the file containing the record numbers. This file has the format of one record number per line entered in columns 1-8, and can be obtained through option 2.3.3 of **qwdata** or created with an editor.

The next prompt asks for the name of the output data table. This is the file created for use with the plotting routine. The program then asks if you want a time-series plot of records already sorted by station ID and date.

If **yes**, the 5-digit parameter code (only 1) can be entered, as date will be used for the X-axis. The data are then retrieved and you are shown some basic statistics (e.g., n, maximum) and asked (a) if the data are to be listed and (b) if the data should be plotted. If yes, the plot file name can be entered, the axis can be labeled, and if you wish, the data points can be connected.

If **no** is the answer to the first query, an X (independent) variable (parameter code) or date can be entered. This plot uses all data regardless of station ID. After the parameter code or date is entered, the Y (dependent) variables (parameter codes) are entered (up to 10) and the basic statistics are shown. The data are then retrieved. You are asked if the data are to be listed, for the name of the plotfile, labeling of the axis, and whether to connect the data points.

Once the data are plotted, regardless of which option is selected, you are told the data are in a binary (meta) file and also how to plot that file (outside the **qwplot** software).

A hard copy of the file can be made by typing in '**postpop**' at the UNIX command level. This postprocessor converts the binary file into a postscript file and sends it to your default printer.

5.2 Option 2 -- Boxplots

(*/usr/opt/nwis/bin/qbboxplot*)

Option 2, the **qbboxplot** program, creates boxplots stored in a file for use in post-processor programs.

A boxplot (fig. 11) is a simple graphical means of displaying statistics for the distribution of reported concentrations for a constituent. The ends of the box define the range of the middle 50 percent of the data, or that part of the data between the 25th and 75th percentiles. The median value of the data, the 50th percentile, is defined by the line across the box. The lines beyond each end of the box are called whiskers, and show the range of those data that extend 1.5 times the range between the 25th and 75th percentiles beyond the ends of the box. Data points beyond the whiskers are called outliers because their values differ so much from the rest of the data. Outliers that extend from 1.5 to 3 times the range of the 25th and 75th percentiles are plotted as an "x" and those that extend more than 3 times are plotted as an "o".

After the program is invoked, a brief query is displayed asking for the file containing the record numbers. This file can be obtained through option 2.3.3 of QWDATA or created with an editor (one record number per line entered in columns 1-8).

The next prompt asks for the name of the output data table. This is the file created for use with the plotting routine. The program asks if you want to make a boxplot with one station with one or more parameters, multiple stations with one parameter, or multiple stations treated as one.

Data-retrieval options	Code
One station with one or more parameters	1
Multiple stations with one parameter	2
Multiple stations treated as one	3

Enter code for option >

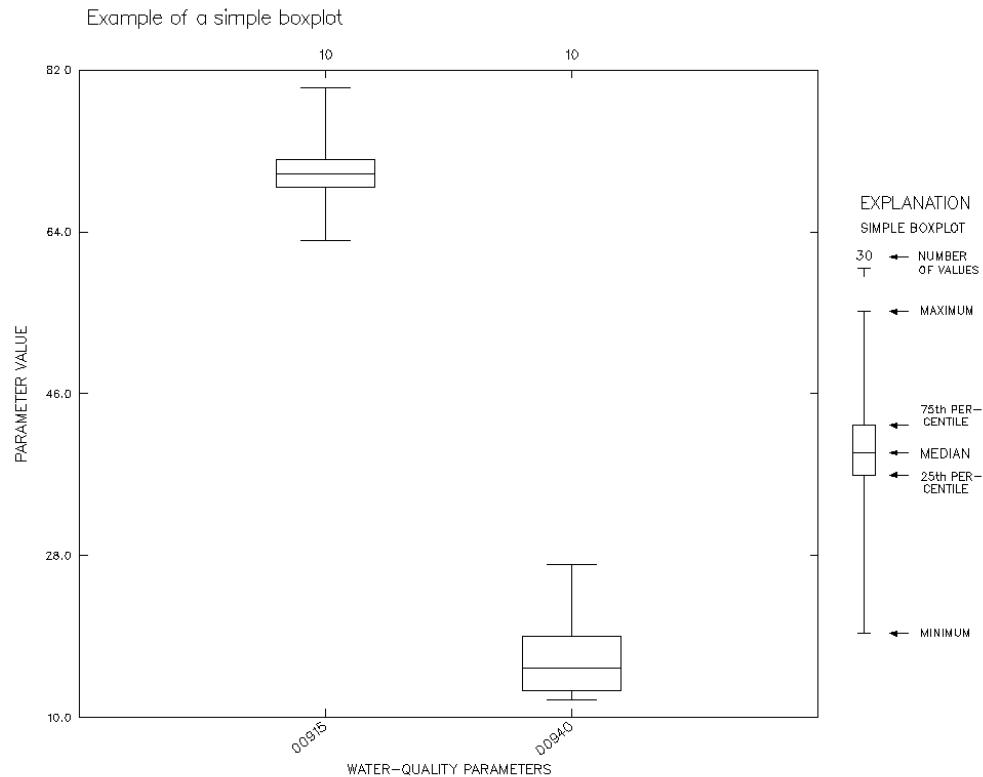


Figure 11. Boxplot

If Option 1 is selected, the program asks for the parameters to be included for the boxplot (maximum of 15). The program will not draw boxplots for less than 10 analyses and the first option input file MUST include record numbers from just one station. The data are retrieved, and the summary statistics are displayed on the screen. The next query is whether you want the data listed. The type of boxplot options are then displayed and you select the type (Schematic, Truncated, or Simple). Now you supply the plot file name, the title of the plot, the current Y-axis label (and if you want it changed), the current X-axis label (and if you want it changed), and, finally, if you want the plot displayed on the screen.

Option two, multiple station boxplots with one parameter, is used for data to be plotted with one parameter for several stations. The queries and responses are similar to the ones for option one.

Option three, multiple stations treated as one, is used for the data from several stations to be grouped as one. The queries and responses are similar to the ones for option one.

Following is an example of the screen prompts and statistical output:

This screen may vary depending on the option selected

As many as 15 parameters can be shown on the boxplot

PARM # 1: Enter parameter code, <cr> = quit >

RETRIEVAL OPTION 1: 1 PARAMETERS FOR STATION: 06018500

GROUPS RETRIEVED 1 MIN VALUE 63.000
GROUPS WITH DATA 1 MAX VALUE 80.000

SUMMARY OF VALUES BY GROUP:

GROUP IDENTIFIER	NUM OF VALUES	MINIMUM	25TH PCTILE	MEDIAN	75TH PCTILE	MAXIMUM
00915	10	63.000	69.000	70.500	72.000	80.000

LIST THE DATA? Ans: y / n, <cr> = n >

Types of boxplot available Code

SCHEMATIC: Shows detached values 1
TRUNCATED: 10th to 90th percentiles 2
SIMPLE: Minimum to maximum values 3

Enter code for type, <cr> = 1 > 3

Enter name for the plot file, <cr> = stop
> clplot

.....10.....20.....30.....40
Enter title for plot (limit 40 chars), <cr> = none
Chloride Plot

Current Y-axis label is: PARAMETER VALUE
Use it? Ans: y / n, <cr> = y >

Current X-axis label is: WATER-QUALITY PARAMETERS
Use it? Ans: y / n, <cr> = y >

PLOTTING DATA ...

END OF DISSPLA 11.0 9003, DRIVERS 9003 -- 1614 VECTORS IN 1
PLOTS.
RUN ON 2/4/97 USING SERIAL NUMBER 9928 AT PRIOR DATA SCIENCE
PROPRIETARY SOFTWARE PRODUCT OF COMPUTER ASSOCIATES, INC.
610 VIRTUAL STORAGE REFERENCES; 6 READS; 0 WRITES.

DISPLAY THE PLOT? Ans: y / n, <cr> = y >

At the prompt: ENTER POST-PROCESSOR DIRECTIVES
type: <cr> A second <cr> quits the display.

ENTER POST-PROCESSOR DIRECTIVES

```
PLOT FILE GENERATED BY userid
      AT PRIOR DATA SCIENCE
      ON FEB  4, 1997 16:56
END OF DISSPOP 3.5 9003, DRIVERS 9003 -- 1614 VECTORS IN 1
PLOTS.
RUN ON 2/4/97 USING SERIAL NUMBER 9928 AT PRIOR DATA SCIENCE
PROPRIETARY SOFTWARE PRODUCT OF COMPUTER ASSOCIATES, INC.
-----
```

```
Plot is in binary metafile > meta.ppp
+-----+
|  For hard copy, type:  postpop <cr>
|  and enter the filename shown above.
|  At ENTER POST-PROCESSOR DIRECTIVES,
|  type: <cr>.
+-----+
```

<cr> to continue ... SCREEN IS CLEARED

5.3 Option 3 -- Stiff Diagrams

(/usr/opt/nwis/bin/qwstiff)

Option 3, the **qwstiff** program, creates Stiff diagrams (Stiff, 1951). Depending on the device type selected, they may be plotted on a CRT screen or a plotter, or a postscript file is created.

The Stiff diagram is a graphical representation of the cations and anions of an analysis in milliequivalents per liter. The Stiff plotting technique uses parallel horizontal axes extending on each side of a vertical zero axis (Hem, 1985, p. 175). Concentrations of the cations are plotted to the left of the vertical axis and anions to the right. The points are then connected and an irregular pattern results. Thus, the patterns can be compared among analyses as well as among sites to illustrate similarities and differences.

The NWIS software plots the cations calcium and magnesium alone, and combines the cations sodium and potassium. The anion sulfate is plotted by itself and the anions bicarbonate, carbonate, and chloride, fluoride are combined. Each plot represents one analysis. The software will not plot a Stiff diagram if any of these components are missing. Figure 12 is an example of a Stiff diagram produced from the software. The asterisks represent lines in the output and are used here to show the outline.

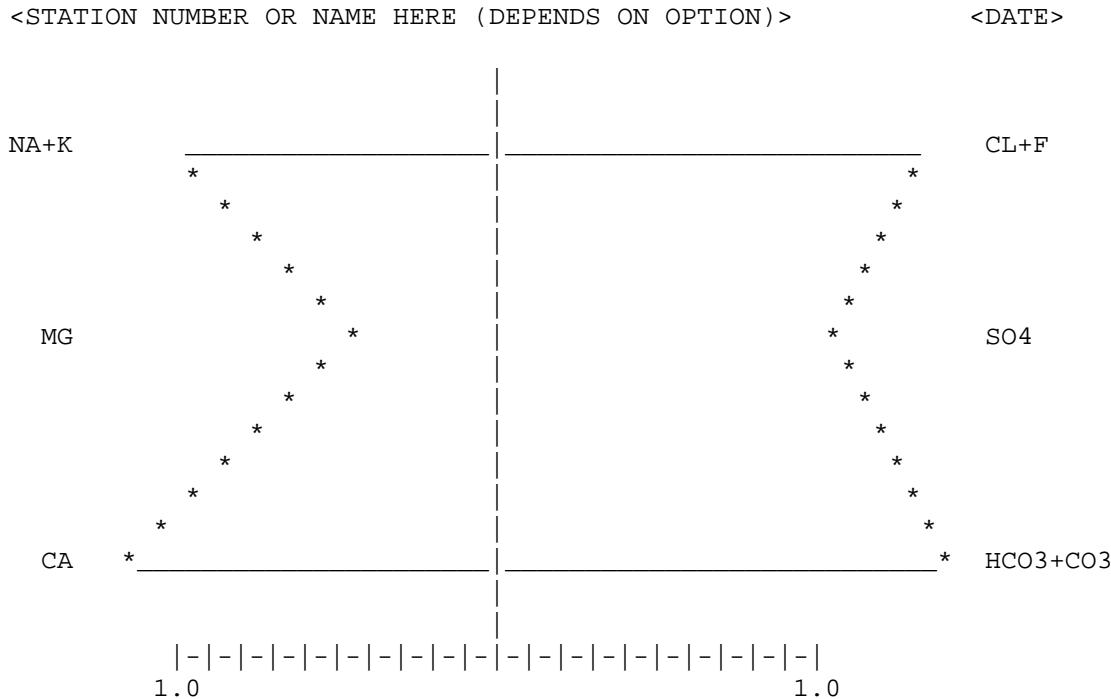


Figure 12. Stiff diagram

The program first asks if you want all diagrams to plot at the same scale (milliequivalents per inch). If YES, the program calculates the width of the plot and the next prompt is for the scale. If NO, the program asks you to enter the width of the diagram in inches and calculates the scale. You are then prompted for the diagram height and the label and

character sizes. A <cr> for any of these prompts causes the program to use the default values listed on the screen.

The next query is whether you want to plot local well numbers instead of the station number. Enter the name of the file that contains the record number list (same format as option 1) and the name of the output file.

A list of device types is printed on the screen and you are asked to select one. If you have trouble here, please see your Site Administrator, as some of these devices may not be supported at your site. After selecting the device, the color selection of the plot is displayed. To continue, a <cr> is needed following each plot.

The output file contains a list of cations and anions, the station number, date, and time for each record. A -1. represents a missing value in the list of cations and anions and an asterisk (*) signifies the bicarbonate value was computed from alkalinity.

5.4 Option 4 -- Piper Diagrams

(`/usr/opt/nwis/bin/qwpiper`)

Option 4, the **qwpiper** program, creates Piper diagrams (Piper, 1983). Piper diagrams can be used to show the chemical character of water. In a Piper diagram, selected cations (positively charged ions--calcium, magnesium, and sodium plus potassium) and anions (negatively charged ions--bicarbonate plus carbonate, sulfate, and chloride) for each analysis are shown as a percentage of the total cations and anions, in milliequivalents per liter. The cations are plotted as single points on the left side triangle and anions on the right. Cation and anion plots for each sample then are projected into the central diamond field. A water type can be described depending on the location of the projected point in the central diamond. The Piper type of diagram can be used to determine whether particular water is (1) chemically similar to some other water, or (2) a simple mixture of two chemically different water types (Hem, 1985, p. 177-179).

A water type in which one cation and one anion dominate (each amounts to 50 percent or more of the cations or anions, respectively) is designated by the names of the dominant cation and anion. A water type in which no cation or anion dominates is designated a mixed-cation or mixed-anion type (Piper and others, 1953, p. 26).

The first prompt asks whether or not you want the axis labeled. If the answer is YES, the names of the parameters are positioned around the cation triangle with calcium on the bottom, magnesium on the left, and sodium plus potassium on the right; and around the anion triangle with chloride, fluoride, and nitrite plus nitrate on the bottom, carbonate plus bicarbonate on the left, and sulfate on the right. The program then asks for the file containing the record numbers (same format as option 1), and then for the output file name.

The program then displays the following:

YOU HAVE THE FOLLOWING SYMBOL OPTIONS
FOR STATIONS:

-
1. USE ONE SYMBOL, ONE COLOR
 2. USE A DIFFERENT SYMBOL, ONE COLOR
 3. USE ONE SYMBOL, DIFFERENT COLORS
 4. USE DIFFERENT SYMBOL, DIFFERENT COLORS
-

ENTER YOUR CHOICE:

If option 1 or 3 is selected, you are prompted for a marker (symbol) number from 0-18. These markers are listed below, and also can be found in the CA-DISSPLA User Manual (Computer Associates International, Inc., 1987, p. A-4-7). If you select option 2 or 4, the program starts with 0 and proceeds through the list.

Table 10. Markers used for stations in Piper diagrams

0	Square	10	Octagon with + symbol inside
1	Octagon	11	Four small triangles joined
2	Triangle	12	Square with + symbol inside
3	Plus symbol	13	Octagon with X inside
4	X symbol	14	Square with triangle inside
5	Diamond	15	Filled-in circle
6	Upside down triangle	16	Circle
7	Square with X inside	17	Square
8	X with horizontal line	18	Filled-in square
9	Diamond and + symbol inside		

When options 2 or 4 are selected, different colors are used for different stations. The colors are white, red, green, blue, magenta, yellow, and cyan. The order of the colors varies with the number of stations plotted and the type of graphic device selected. Depending on the number of colors you select, the program changes colors for each station in the order listed above or each sample, depending on the option, starting over again when it reaches red.

A list of device types is printed on the screen; select the appropriate one.

The output file contains a list of cations and anions, the station number, date, and time for each record. A -1.000 represents a missing value in the list of cations and anions and an asterisk (*) signifies the bicarbonate value was computed from alkalinity. Figure 13 is an example of a Piper diagram.

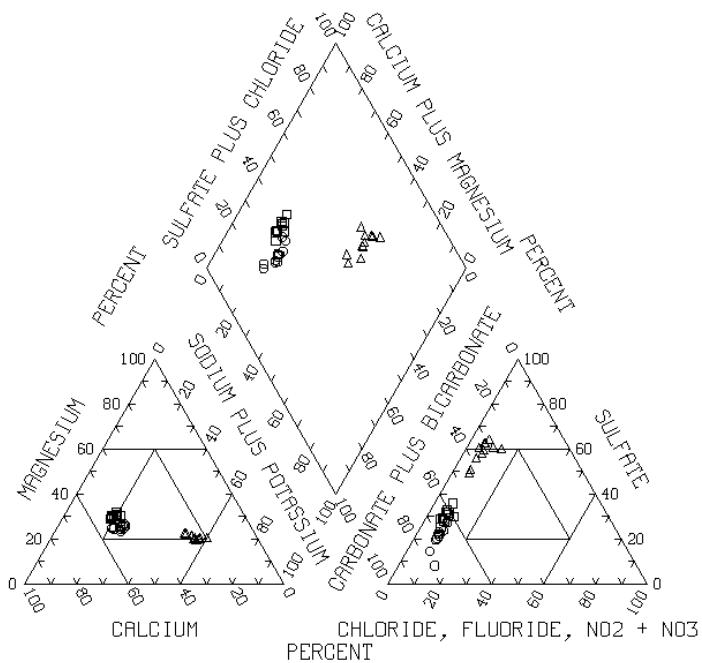


Figure 13. Piper Diagram

5.5 Option 5 -- Time Series Plots

(/usr/opt/nwis/bin/qwtpplot)

Option 5, the **qwtpplot** program, creates time series plots of data from the Water-Quality File. After choosing this option, the screen is cleared and the following form is displayed:

```

QW DATA BASE PATHNAME IS: /usr/opt/nwis/data/midas/db01/
AGENCY: USGS RECORD CATEGORY: QW STATION NUMBER _____
PARAMETER CODE: _____ BEGIN DATE: YYYYMMDD END DATE: YYYYMMDD
GRAPH HEIGHT (INCHES): 12 TIME SCALE (INCHES PER YEAR): _____
MARKER TYPE (0-18): 0 ARITHMETIC OR LOG SCALE (A OR L): A

```

The first line is the data base from which the data will be retrieved. For the other form entries, you may <cr> to take the default value; if there is a default value it is shown on the form. An invalid station number or parameter code causes an error message to be displayed and the cursor returns to the start. A "Q" in the first space of the station number ends the program. A blank field for the begin date and end date causes plotting of the entire period of record. If the period of record is greater than 50 years, only the first 50 years are plotted. An error message informs you of this after the plot is completed. The graph height default is 12 inches, and the time scale default is 32 divided by the number of years in which there are data that you have requested. These values are in inches; however, if your device type is not this large CA-DISSPLA attempts to scale the plot down. If your plot has some clipped edges, decrease the graph height and/or time scale. See the

CA-DISSPLA User Manual for the marker types. You have a choice of a semi-log or an arithmetic plot; the default is an arithmetic plot.

The program then asks if you want the points connected by a line on the plot; the default is connected. A list of device types is printed on the screen; select the appropriate one. When the plot is finished, <cr> to continue. You are then asked whether or not you want another plot. If YES, follow the same procedure as before; however, no device type will be asked for (the same one will be used).

5.6 Option 6 -- Regression Plots

(/usr/opt/nwis/bin/qwregress)

Option 6, the **qwregress** program, creates a parameter versus parameter plot with a linear regression line plotted. It will also output some standard statistics. When you first enter the program, the following message is displayed:

```
+-----+
|          C A U T I O N !
+-----+
| To display a plot in an X-window, a Unix environmental
| variable called "DISPLAY" must be pre-set to allow the
| server access to your terminal. On some systems, this
| variable may be set automatically; on others, however,
| it is not. The DISPLAY variable CANNOT be reset from
| inside a program; therefore, you should verify the cur-
| rent setting before QWREGRESS starts. If you are not
| sure that this setting is correct, please contact your
| system administrator.
+-----+
```

The current setting is => DISPLAY=:0.0

Stop the program? Ans: y / n, <cr> = n >

If you choose to continue the program, the procedure is as follows:

1. The program asks for a file name that contains the record numbers.
2. You are then asked for the output file name; this file will contain the input data and summary statistics.
3. The next query is whether or not you want a file produced for use with TELAGRAF. If YES, the TELAGRAF file name will be the file name for the output (what you used in answering step 2 above, plus a suffix of ".TAG"). If you choose this option, the next query will be step 8.
4. You have the option to suppress the plotting of the regression line.
5. Enter the symbol number you want used on the plot; see the CA-DISSPLA User's Manual (CA-DISSPLA User Manual (Computer Associates International, Inc., 1987, p. A-4-7) for a list of symbols.

6. Enter the symbol height multiplication factor; 2 is the maximum. This factor will be multiplied by .08 to determine the symbol height in inches.
7. Enter the appropriate device type.
8. The next query is whether you want separate regressions by station; if YES, you get a plot for each station in the input file.
9. Enter the X-axis parameter (independent variable).
10. Enter the factor by which to multiply the X parameter.
11. Enter the Y-axis parameter (dependent variable).
12. Enter the factor by which to multiply the Y parameter.
13. You are then asked if you want to take the log base 10 of the data. This will produce a log-log plot and the statistics will be done on the log base 10 of the data.
14. You may review your input; if it is not correct, answer NO to the prompt and the program will return to step 9.
15. After the plot is finished, press <cr>. You are asked if you would like another set of parameters processed. If YES, the program returns to step 9; if NO, the program ends.

Notes: The linear regression is performed by the IMSL subroutine RLONE and is described in the IMSL Reference Manual, v.4 (IMSL, Inc., 1982). The confidence intervals for the coefficient and the intercept are 95 percent confidence intervals. You must have at least three values for the program to work.

5.7 Option 7 -- Flat File Output

(/usr/opt/nwis/bin/qwflatout)

Option 7, the **qwflatout** program, is designed to output data from the Water-Quality File in two formats: (1) a flat file for use in application programs, or (2) an RDB file, which is a relational database system format for tabular data. Flat file means that the output for one record may be considered to exist on one line. The **qwflatoutm** program, found on the **qwdtata** Utilities menu, makes a flat file that includes method codes. The **qwflatoutm** program is discussed in section 2.5.5 of this document.

The program asks for an input file containing the record numbers, and the name of an output file. The program then asks if parameters are to be entered from the terminal. If NO, you are prompted for the name of a file that contains the list of parameters to be tabled. This file should contain valid parameter codes (with leading zeros) beginning in column 1, one parameter per line. If you elect to enter parameters from the terminal, a prompt of ">" is entered for each parameter; the parameter list is ended by entering a <cr>. Alpha parameter codes supported by this program are shown in table 11:

Table 11. Alpha parameter codes supported by qwflatout

Alpha Parameter Codes	Description
ADDPC	All parameters in analyses except calculated parameters. Note: This is different from the qwtable program.
AGNCY	Agency code -- 5 characters
ANULL	Blank 9-character column for spacing
ASRCE	Analysis source -- 1 character
ASTAT	Analysis status -- 1 character
ATYPE	Analysis type -- 2 characters
CALCV	Calculated parameters
CNTYC	County code -- 3 characters
CTBDA	Contributing drainage area -- 8 characters
DATES	Sample dates, month-day-year -- 6 characters
DISTR	District code -- 2 characters
DBNUM	Data base number of the qwdata
DSTAT	District-processing-status code
EDATE	Ending date -- 6 characters YYMMDD
ETIME	Ending time -- 4 characters
EVENT	Hydrologic event -- 1 character
GUNIT	Geologic unit code -- 8 characters
HSTAT	Hydrologic condition code -- 1 character
HUNIT	Hydrologic unit -- 8 characters
LABNO	Laboratory number -- 7 characters
LATLG	Latitude-Longitude -- 6-digit latitude,7-digit longitude in 2 columns.
LOCAL	Local well number -- 26 characters
MEDIM	Medium code -- 1 character
M1LAB	Messages from the laboratory
M2LAB	Messages to the laboratory
PRIME	Prime node identifier (from system subroutine)
PRJCT	Project identifier (from the sample record)
SAMPL	Record number -- 8 characters
SITEC	Site type -- 2 characters
SNAME	Station name -- 50 characters
STAID	Station number -- 15 characters
STATE	State code -- 2 characters
STYPE	Sample type code -- 1 character
TIMES	Sample times -- 4 characters

The rules for parameter codes are as follows:

Numeric parameters contained in the Parameter Code Dictionary are supported. Parameters are placed in the file in the order in which they are found in the list.

If the alpha parameter CALCV (all possible calculated parameters) is included, the calculated parameters, in ascending order of parameter code, are included at the point where the CALCV parameter was entered.

If the alpha parameter ADDPC is included, it must be the last parameter in the list; the program will not read more parameters after ADDPC.

If the alpha parameter ADDPC is included, all numeric parameters (including those added by CALCV) are printed in ascending order of parameter code. Alpha parameters are not sorted.

A maximum of 1,000 parameters may be included in a single retrieval.

If an invalid numeric parameter is requested, an error message is written and the requested parameter is ignored.

Multiple occurrences of the same parameter are not permitted; if a parameter is entered more than once, the first occurrence is retained and others are deleted from the list.

When parameters have been entered, the program prompts you for rounding options. See section 2.3.6, for information on rounding and precision codes. The options are:

- Default rounding (D), which produces tables with each individual parameter value rounded to the appropriate level using the rounding instructions stored in the Parameter Code Dictionary;
- User-set rounding (U), which produces tables with each individual parameter value rounded using the rounding instruction stored in the analysis at the parameter level (precision code); or
- No rounding (N), which produces tables with each individual parameter unrounded (output as stored in the analysis but converted to real value from character representation).

The program displays a prompt for your choice of output format (fixed-format or RDB) and then informs you that data are being processed. When completed, the program writes a message asking if you want to prepare another file at this time. If YES, the program dialog starts over from the beginning; if NO, the program ends.

The flat file is in the following output format:

```

Remark (1) - col. 1
Value (1) - cols. 2-10
Remark (2) - col. 11
Value (2) - cols. 12-20
.
.
.
Remark (N)
Value (N)

```

The exceptions to this rule are some of the alpha parameters.

```

LATLG: uses 19 columns; positions 3-9 contain the
        latitude and positions 12-19 contain the longitude.
LOCAL: uses 19 columns.
SNAME: uses 49 columns.
STAID: uses 19 columns.

```

Note: Missing values are shown as "-999999".

The parameter codes, short names, and the units are written to a file so that data are written to the data file. This file's name is formed by adding ".PARNAMES" to the file name you give to the data file and is written in the following format:

```

Parameter Code: cols. 1-5
Short Name     : cols. 7-22
Units          : cols. 24-39

```

5.8 Option 8 -- Summary Statistics Table

(/usr/opt/nwis/bin/qwprcntl)

Option 8, the **qwprcntl** program, reads the data and parameter name files created by a run of **qwflatout** (option 7) and produces a table of summary statistics. The heading on the summary table requires information from the Site File obtained by using the following alpha codes as the first six codes in the parameter list passed to **qwflatout**:

STAID, SNAME, DATES, LATLG, CNTYC, CTBDA

The above six codes must be present in the parameter list. The following codes also may be present:

LOCAL may be included and will be used as the station name.

81024 (DRAINAGE AREA) may be included and will be used as the drainage area in place of the contributing drainage area.

The program asks for the input data file name (created by a run of **qwflatout**). The program then asks for the parameter list file name. This file is created by a run of **qwflatout**, or you may create your own file by using the format described in section 5.7. The names need to be in the same order as the input data. The program then prompts for the output file name and asks if you wish to report estimated percentiles for censored parameters.

At this point, the interactive portion of the **qwprcntl** program is finished. This program may run for a long time, depending on the number of parameters to be processed and the number of records.

A log-probability regression procedure is used to estimate the mean (and the percentiles, if requested) of censored parameters. This procedure handles multiple-detection limits. The methods used are as follows:

Uncensored parameters:

1. The data are ranked in ascending order and positions for the percentiles are found using the following formula:

$$K = Pct * (N + 1)/100$$

where K is the expected position, Pct is the integer percentile (e.g., for the 5th percentile, Pct = 5; for the 25th percentile, Pct = 25) and N is the number of observations. If the position K is a whole number, then the value in that position in the rank order data is the value used for the percentile. If K is not a whole number, then the following interpolation is used:

$$P(Pct) = X(\text{trunc}(K)) + (K - \text{trunc}(K)) * \\ (X(\text{trunc}(K)+1) - X(\text{trunc}(K)))$$

where P(Pct) is the desired percentile, X() is the rank order data set, trunc(K) is the truncated value of K and Pct is as above.

2. If the number of observations is greater than 1 and less than or equal to 5, only the maximum, minimum, and mean are reported.
3. If the number of observations is equal to 1, only the maximum is reported.

4. If the maximum is equal to 0.0, only the maximum is reported, regardless of the number of observations.
5. All values in uncensored parameters are treated the same regardless of any codes associated with those values.

Censored parameters:

1. If the percent of values flagged with "<" or "U" is greater than 5 percent of the total number of data values for a parameter, the parameter is considered censored.
2. The mean of censored parameters is estimated with a log-probability regression procedure. The method estimates the values below a detection limit, and uses these values and the detected values of a parameter to estimate the mean. The FORTRAN implementation of this method was done by the Systems Analysis Group, WRD, USGS. This method was chosen as the best way to handle the problems presented by multiple detection limits in water-quality data. The estimated mean is flagged with an "*" and explained in a footnote on the statistical summary table.
3. If estimated percentiles are requested, the same procedure that is used to estimate data below the detection limit for the calculation of the mean is used to estimate the data below the detection limit and to calculate the percentiles. The percentile values are calculated using the same method as described in Part 1 of the previously mentioned uncensored methods. These values are also flagged with "*" to indicate that they are based on an estimated data set and the "*" is explained in a footnote.
4. If nonestimated percentiles are requested, only actual values are used for the percentile values in the statistical table. The percentiles retain a "<" flag if one is associated with the value originally and no interpolation between values is used. To establish the set of sorted data that the percentiles are selected from, all values flagged with "<" or "U" are assumed to be less than any value without a flag. For example, the following values are shown in the ascending order that would be used.

<0.1 <1 <20 .01 17 500

5. Only "<" and "U" remark codes are used to distinguish censored from uncensored parameters and subsequently established as less-than values in the statistical procedures. Other remark codes are processed as follows:
 - K - treated as a detected value
 - E - treated as a detected value
 - > - values dropped from statistical procedures
 - M - values dropped from statistical procedures
 - N - values dropped from statistical procedures
6. If the average of two values must be taken to obtain the value for a percentile, the remark code of the greater value is associated with the percentile.
7. Any values equal to 0 in a censored parameter are replaced with the value of the nearest less-than value (in time-order) and the remark code is set to "<".

8. If the number of observations above the detection limit is less than 5, the estimated values are considered unreliable and are not reported.
9. If the total number of observations (above and below the detection limit) is greater than 1 and less than or equal to 5, only the maximum and minimum are reported.
10. If the total number of observations is equal to 1, only the maximum is reported.

Effective limits of the program:

1. The maximum number of parameters (header and water-quality) cannot exceed 1000.
2. The maximum number of values per parameter per station is set to 1000.

5.9 Option 9 -- Detection Limits Table

(/usr/opt/nwis/bin/qwdetlims)

Option 9, the **qwdelims** program, reads the data and parameter name files created by a run of **qwflatout** (option 7) and produces a table of detection limits. The heading on the table requires information from the Water-Quality File that is obtained by using DATES in the parameter list passed to **qwflatout**.

The **qwdelims** program produces a table of detection limits encountered in the input data file for each parameter in the parameter list file, excluding the alpha parameter codes and the numeric codes for mean discharge, instantaneous discharge, and drainage area (00060, 00061, and 81024, respectively). A maximum of 350 valid numeric parameter codes can be handled by the program, and a maximum of 19 years can be processed for each run.

The program asks for the input data file name created by **qwflatout**. The program then asks for the parameter list file name. This file is created by **qwflatout**, or you may create your own file by using the format described in section 5.7. The names need to be in the same order as the input data.

The program then asks for the output file name and asks if you want to specify the period of record to be used (19 years, maximum) or to use the dates from the input data file (only the last 19 years will be counted). If specifying the period of record, you are then asked for the beginning year and the ending year.

At this point, the interactive portion of the **qwdelims** program is finished. This program may run for a long time, depending on the number of parameters that are to be processed and the number of records.

The output table is headed by the name of the parameter from the parameter list file, the corresponding parameter code, and the total of the nonmissing values encountered for that parameter. The table consists of a column of detection limits encountered (a data value with a remark code of "<" or "U"), columns of counts of detection limits encountered for each selected year (up to a maximum of 19 years), a summary column (the total of the counts for that detection limit), and a final column giving the percent of the total, non-

missing values represented by that detection limit. The rows are in the order of detection limits as they are encountered in the input data.

The input data file is considered as a whole. By selecting appropriate record numbers to be used by **qwflatout**, **qwdetlims** can be used to show detection limits encountered for a single station, a single county, a specific project, a single year, or any period of years up to 19. If the output from **qwflatout** had 50 years of data, it could be processed by **qwdetlims** in three runs.

One use of the detection limits table is for locating probable order-of-magnitude data errors. For example, if a parameter has a detection limit of <0.5 for a period of years and a single (or few) detection limit(s) of <50., the single data value should probably be reviewed. Another use is for evaluating the data before or as they are used in statistical analysis.

5.10 Option 10 -- Statistics Plots

(/usr/opt/nwis/bin/qwstatplot)

Option 10, the **qwstatplot** program, displays various statistical properties of a single variable. Techniques are those taught in the course "Probability and Statistics for Data Analysis" or found in the text "A Modern Approach to Statistics" (Iman and Conover, 1983).

The program requires that the data be entered into a UNIX ASCII file. You must know (1) the input data file name, (2) the sample size (number of values, a maximum of 500 values is allowed), and (3) the FORTRAN format (number of columns and type description) to read a row of the input data. Graphon terminals should be set to accept mode changes from the host "VIA GS/CAN/ ESC FF" (SETUP E, SWITCH 2 SET TO 2) and Tektronix terminals should be set in CODE ANSI. After plots, press <cr> to resume the program.

The program starts by displaying the previous two paragraphs of text and asking if you wish to continue. If NO, the program ends. If YES, the program asks for the input data file name and the sample size (number of values). The program then attempts to read and display the first row of the input data file. The program next asks for the number of columns (values/column) and the input format. A sample format is 10F12.2,7X,F4.0. The values based on your format line are displayed, with the prompt:

OK (Y/N) .

When the data have been read, the program asks for a title to be used in the various routines (up to 42 characters of alphanumeric text) and for the variable name to use for the x-axis label (up to 50 characters of alphanumeric text). The program then provides the following device selection menu:

```
DEVICE SELECTION MENU
*****
1. GRAPHON
2. TEKTRONIX
3. HP7475 PLOTTER
4. META FILE
ENTER YOUR SELECTION-->
```

If the response is 1 (GRAPHON), the program then displays the following main menu:

```
MAIN MENU
*****
(FOR HELP TYPE OPTION NUMBER FOLLOWED BY 9 )
1. DISPLAY SAMPLE STATISTICS
2. STEM AND LEAF PLOT
3. DISPLAY REAL NUMBER LINE PLOT
4. PLOT BOXPLOT
5. PLOT HISTOGRAM
6. PLOT FREQUENCY POLYGON
7. PLOT OGIVE
8. PLOT EMPERICAL DISTRIBUTION FUNCTION
9. PLOT QUANTILE PLOT
10. PLOT Q-Q PLOT
11. PLOT LILLIEFORNS TEST FOR NORMALITY
12. PLOT SYMMETRY PLOT
13. RESTART WITH NEW DATA SET
14. CHANGE OUTPUT DEVICE
15. ADD/REMOVE OUTLIERS
16. TRANSFORM DATA
17. EXIT PROGRAM
ENTER YOUR SELECTION-->
```

If 2 is selected (TEKTRONIX), the program asks for the model number; if 3 is selected (HP7475 PLOTTER), the program asks for the paper size; and if 4 is selected (META FILE), the program asks for the name of the output file. The program then continues with the main menu described previously. To view the output plots on the screen using an X-terminal, select option 2. To switch to the TEK mode, use the <**ctrl**> button (held down) and the middle mouse button.

As noted in the main menu, online help for any of the 16 options can be obtained by entering the number followed by 9; the help for plotting the symmetry plot, option 12, will be displayed by entering 129. The online helps are displayed as follows:

HELP FOR SAMPLE STATISTICS

SUMX is sum of all values of X.

N is number of observations.

DIFS is the difference of each X from the mean.

DIFSQUARE is the sum of the squared DIFS.

DIFCUBE is the sum of the cubed DIFS.

DIFQUAD is the sum of the DIFS to the 4th power.

Then: Mean (XMEAN) is SUMX/N.

Standard deviation (SD) is square root of (DIFSQUARE/(N-1)).

Variance is SD squared.

Coefficient of variation is SD/XMEAN.

Skew is (DIFCUBE/N)/((DIFSQUARE/N)**1.5).

Kurtosis is ((DIFQUAD/N)/((DIFSQUARE/N)**2)-3).

The mean is the arithmetic average of the sample values and is a measure of the center of the sample. The standard deviation is a measure of the variability within a sample; about two-thirds of sample observations are within one standard deviation of the mean, and 95 percent within two standard deviations of the mean. The coefficient of variation is dimensionless and can be used to compare variability of two different samples. Skew measures asymmetry of a sample around the mean--extreme values extending further out to the right cause positive skew.

Median: The central value if N is odd. The average of the two central values if N is even.

Range: The largest value of X minus the smallest value of X.

First quartile: The median of the lower half of the sample (central value or values not included).

Third quartile: The median of the upper half of the sample (central value or values not included).

Interquartile range: Third quartile minus first quartile.

Outside value: Sample values from 1.5 to 3.0 times the interquartile range less than the first quartile or greater than the third quartile.

Detached value (also called farout value): Sample values more extreme than 3.0 times the interquartile range less than the first quartile or greater than the third quartile.

The median is the central value of a sample set, and as a measure of central location is minimally affected by outliers. The interquartile range is a measure of spread of a data set--it measures the range of the central 50 percent of the dataset and is not influenced by data outside this range. Detached values occur fewer than once in 10,000 times in a normal distribution, and may suggest non-normality or spurious data.

HELP FOR STEM AND LEAF PLOT

A stem and leaf plot shows the distribution of the individual sample observations. This version of the plot separates and lists far outside values. The remaining values are shown in the plot. Values are rounded to two significant figures. The stem shows variation in the first significant figure of the data, and the leaf lists values for the second significant figure. For example, a sample value of 134 would first be rounded to 130. A stem value of 100 and a leaf value of 10 would be selected; the data value would be displayed as 1 : 3. In some cases stem units are subdivided into two classes to show more detail; the lower class is for leaf values of 0 to 4 and the upper class is for leaf values of 5 to 9.

HELP FOR REAL NUMBER LINE PLOT

The real number line plot simply shows all sample values plotted on a single axis. It gives a general impression of the relative values of all sample observations. It may be misleading, however, when many sample values are similar and thus overplot as a single point on the line.

HELP FOR BOXPLOT

The boxplot shows non-parametric statistics graphically. The box is drawn from the first quartile to the third quartile, so its length is the interquartile range. The center line in the box is drawn at the median. Whiskers extend from the box to the upper and lower adjacent values; the upper adjacent value is defined as the largest data point less than or equal to the upper quartile plus 1.5 times the interquartile range; the lower adjacent value is defined as the smallest data point greater than or equal to the lower quartile minus 1.5 times the interquartile range. Adjacent values are plotted with an asterisk. Outside values are plotted as a circle. Boxplots thus give a general idea of the shape of the distribution, the location of most of the data points, the skew, and the existence of possible spurious values.

HELP FOR HISTOGRAM

A histogram shows the frequency distribution of data from a sample by grouping the data into equal intervals, called classes. The frequency of a class is the number of sample observations that fall within that class interval. The relative frequency of a class is its frequency divided by the total number of observations in the sample. Classes are displayed in a histogram as bars; the width of the bar shows the class width, and the height of the bar shows the class frequency or relative frequency. The shape of a histogram can change drastically depending on the number of classes and the width of the class interval. A suggested number of classes is calculated using the formula $1 + 3.33 * \text{LOG10}(N)$. The user inputs number of classes, class interval, and lower limit for first interval. It is suggested that several setups be tried in order to view the variable shapes of the histograms.

HELP FOR FREQUENCY POLYGON

The frequency polygon is similar to the histogram. Midpoints of the tops of histogram bars for each class are joined by a continuous line. Line segments are added at the extremes of the histogram to show frequency (or relative frequency) falling to zero outside of the histogram. The resultant graph gives an impression of the shape of the frequency distribution of a sample.

HELP FOR OGIVE

An ogive (pronounced oh-jyve) is a plot of cumulative relative frequency of a sample grouped into classes. The cumulative relative frequency for each class is represented by a point located at the upper class boundary for that class. The ogive is useful for estimating the proportion of observations in the sample that are less than or equal to any value.

HELP FOR EMPIRICAL DISTRIBUTION FUNCTION

The empirical distribution function (EDF) is a plot of cumulative relative frequency (y-axis) versus data value (x-axis) for the ordered dataset. It is similar to the ogive except that a point is plotted for each data value rather than grouping data into classes. The cumulative relative frequency for the i th ordered data point is i/N . The resultant stair-step pattern can be used to find quantiles for a dataset. Gaps in a dataset can be identified by long horizontal lines in the EDF. EDF's can also be used for comparison with cumulative distribution functions (CDF) for various theoretical distributions. For example, the CDF for the normal distribution plots as an S-shaped curve on an EDF plot.

HELP FOR QUANTILE PLOT

Quantile plots are graphs of data values versus the fraction of data less than that value. The quantile plot is similar to the empirical distribution function except that (1) points are connected as straight lines rather than steps, (2) cumulative frequency is calculated using a plotting position; here, the Cunnane formula is used [$p = (i - 0.4)/(N + 0.2)$] rather than simply i/N , and (3) the axes are reversed for the quantile plot, with plotting position shown on the x-axis.

Quantile plots may be used to estimate quantiles for a population from which a sample is drawn. Like the EDF, the quantile plot may be used to compare sample distributions or to compare a sample distribution with a theoretical distribution.

HELP FOR Q-Q PLOT

The Q-Q plot is a quantile-quantile plot, also known as a probability plot. In this plot, quantiles of the sample data are transformed into normal quantiles and plotted. The x-axis of the plot is the linear standard normal quantile scale, usually plotted from -3 to +3. Alternately, the equivalent nonlinear normal probability scale (exceedence probability) can be used, and is usually plotted for 0.01 to 99.99 percent. The y-axis is the sample value scale. A normal sample will plot as a straight line in a Q-Q plot; therefore the normality of a dataset can be examined using this plot. Left skewness in a sample produces a convex Q-Q plot; right skewness produces a concave plot. Outliers appear on a Q-Q plot as departures from the pattern of the rest of the data.

The program first prompts the user for a marker symbol code. Available symbols and their codes are given on page 9 of the CA-DISSPLA Pocket Guide. The user is also prompted for a symbol size multiplication factor; this factor will alter the default symbol size. For example, a factor of 2.0 will draw a symbol twice as large as the default symbol size.

HELP FOR LILLIEFORS TEST FOR NORMALITY

The Lilliefors test for normality is used to check the null hypothesis that a sample is normally distributed. To do this, the empirical distribution function of the standardized sample is first plotted. This is then compared with Lilliefors bounds which have been calculated for a designated confidence level; here the 95 percent bounds are shown. If a sample EDF falls within these bounds, the hypothesis of normality cannot be rejected at an alpha level of confidence of 0.05.

Lilliefors bounds for this program were taken from "Practical Nonparametric Statistics" (Conover, 1980, p. 463). These bounds were generated using Monte Carlo methods; that is, over 1000 sets of randomly generated normal deviates were examined for each sample size tested, and for N=10, for example, it was found that 95 percent of the samples fell within a vertical shift of 0.258 from the theoretical normal plot.

HELP FOR SYMMETRY PLOT

A symmetry plot displays the symmetry of a dataset about the median. The ordered dataset is split at the median, and data values are paired by position equidistant from the median, for example, [X(1),X(N)];[X(2),X(N-1)]. For each pair, the distances from the median are calculated and plotted against each other. The axes of the symmetry plot are at the same scale; hence a symmetric sample would plot as a straight diagonal line. Points plotted above this line are right-skewed, while points plotted below this line are left-skewed.

HELP FOR NEW DATASET RESTART

This option allows the program to be restarted with a different input file. It returns the user to the data input prompts.

HELP FOR CHANGING OUTPUT DEVICE

The change-output-device option returns the user to the device selection menu. Graphics may be directed to a Graphon (Tab) screen, a Tektronix screen, an HP7475 plotter, or to a META file.

HELP FOR REMOVING OUTLIERS

This program allows removal of possible outliers by simply selecting the option, and entering the number of high and/or low points to be removed. The program does not define outliers, but the user may experiment by removing points identified by nonparametric statistics as outside values, or by examining plots for data that appear to originate from a different distribution. Since no rigorous identification of outliers is made, this option can only be used in an exploratory way.

Sequential use of this option will cumulatively remove data points; however, the original data set will be restored if 0 is typed in response to both removal inquiries.

HELP FOR TRANSFORMING DATA

Transformations are used to make data (1) more symmetric, (2) more constant in variance, and (3) more linear. The transformations allowed in this program follow the ladder of powers. A transformation with large positive power (for example, the cube, with a power of 3) is used to correct left (negative) skewness. A transformation with large negative power (for example, the reciprocal square, with a power of -2) is used to correct right (positive) skewness. For transformations with negative power, a minus sign is used to preserve the order of the data.

The program will not allow transformations on data sets with values less than or equal to zero; this is because most of the listed transformations cannot be done on values less than or equal to zero, or because such a transformation might alter the ordering of the dataset. Even if outliers have previously been removed from a data set, selection of the transformation option will recall the original complete data set. Selection of the ORIGINAL UNITS option will restore the full untransformed dataset. Sequential transformations are not allowed by the program.

If the selection from the main menu is 1, the program outputs the following statistical summary:

```

        TITLE
        RAW DATA
        STATISTICAL SUMMARY (N=100)

        MEAN: 992.          MEDIAN: 962.0
STANDARD DEVIATION: 182.2          RANGE: 1136.
        VARIANCE: 33215.      FIRST QUARTILE: 881.0
COEFFICIENT OF VARIATION: .18377    THIRD QUARTILE: 1070.
        SKEW: 2.510          INTERQUARTILE RANGE: 189.0
        KURTOSIS: 10.15      # OF OUTSIDE VALUES: 0
                                # OF DETACHED VALUES: 1

```

If the selection from the main menu is 5 or 6, the program asks for a choice between frequency or relative frequency. If the selection is 5, 6, or 7 the following information is output:

```

MINIMUM DATA VALUE IS
MAXIMUM DATA VALUE IS
RANGE OF VALUES IS
SUGGESTED NUMBER OF INTERVALS IS
SUGGESTED INTERVAL SIZE IS

```

The program then asks for the number of intervals desired, the interval desired, and the beginning value for the first interval.

If the selection from the main menu is 10, the program asks for the marker symbol code (0-18), for the multiplication factor to determine the marker symbol size, and for a choice between plotting the x-axis in quantiles or exceedence probabilities.

If the selection from the main menu is 13, the program restarts at the point of asking for the input data file name.

If the selection from the main menu is 14, the program restarts at the device-selection menu after printing some CA-DISSPLA messages.

If the selection from the main menu is 15, the program asks how many low values and how many high values are to be removed. To get the entire, original dataset back, answer zero to both questions.

If the selection from the main menu is 16, the program displays the following transform selection menu:

TRANSFORM DATA

Transformations are done on the full data set. Values less than or equal to zero are not allowed. Sequential transformations are not allowed.

1. CUBE, POWER OF 3
 2. SQUARE, POWER OF 2
 3. ORIGINAL UNITS
 4. SQUARE ROOT, POWER OF 1/2
 5. LOGARITHM (BASE 10), POWER OF 0
 6. RECIPROCAL ROOT, POWER OF -1/2
 7. RECIPROCAL, POWER OF -1
 8. RECIPROCAL SQUARE, POWER OF -2
- PLEASE ENTER YOUR SELECTION--->

At this point, the interactive portion of the **qwstatplot** program is finished. This program may run for a long time, depending on the amount of data to be processed.

There are some error messages that may appear at various times, seemingly data dependent. Users are urged to report problems or unexplained error messages (please provide script files, if possible) to the NWIS Program Office. Among the known error messages are the following:

1. >>>> ERROR OPENING VIRTUAL STORAGE PAGING FILE 11.
(following device reselection)
2. SUBSCRIPTRANGE raised in QWSTATPLOT at . . .
(SUBSCRIPTRANGE)
ERROR raised in QWSTATPLOT at . . .
(no on-unit for SUBSCRIPTRANGE)
(following selection of option 2, stem and leaf plot)
3. Error: condition "ACCESS_VIOLATION\$" raised at . . .
(Referencing . . .)
(following selection of option 4, boxplot)
4. ERROR raised in TRAN at . . .
LOG argument <=0)
(following selection of option 11, Lilliefors test)

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6 Quality-Assurance Data Base for Water-Quality

Procedures have been established for the storage and retrieval of water-quality, quality-assurance (QA) data within NWIS. These procedures allow storage of all field-derived QA data. The QA samples are identified so they can be related to corresponding environmental samples. However, the procedures allow the QA samples to be stored separate from the environmental samples to prevent unintentional retrieval of the QA samples.

6.1 Definitions of Quality-Assurance Data

Blank samples are taken to ensure that environmental samples have not been contaminated by the data-collection process. Any measured value/signal in a blank sample for an analyte (a specific component measured in a chemical analysis) that was absent in the blank solution is believed to be due to contamination. There are many types of blank samples possible, each designed to segregate a different part of the overall data-collection process including sampling, filtering, preserving, storing, transporting, and analyzing:

Blank solution - Solution that is free of the analyte(s) of interest. Such a solution would be used to develop specific types of blank samples as described below.

Shelf (or hold) blank - a blank solution put in the same type of bottle used for an environmental sample and stored adjacent to an environmental sample in a storage area.

Refrigerator blank - a blank solution put in the same type of bottle used for an environmental sample and stored adjacent to an environmental sample in a refrigerated storage area.

Trip blank - a blank solution put in the same type of bottle used for an environmental sample and kept with the set of sample bottles both before and after sample collection.

Sampler blank - a blank solution poured or pumped through the same field sampler used for the collection of an environmental sample.

Filter blank - a blank solution filtered in the same manner and through the same filter apparatus used for an environmental sample.

Splitter blank - a blank solution mixed and separated using a field splitter in the same manner and through the same apparatus used for an environmental sample.

Preservation blank - a blank solution treated with the same preservatives used for an environmental sample.

Field blank - a blank solution subjected to all aspects of sample collection, field processing, preservation, transportation, and laboratory handling as an environmental sample.

Equipment blank - a blank solution processed through all equipment used for collecting and processing an environmental sample (similar to a field blank but normally done in the more controlled conditions of the office and not

being transported to the field).

Ambient blank - a blank solution put in the same type of bottle used for an environmental sample, kept with the set of sample bottles before sample collection, and opened at the site and exposed to the ambient conditions.

Source solution blank - a blank solution sent to a laboratory to confirm that it is free of the analyte of interest.

Lab blank - a blank solution prepared in the laboratory and analyzed the same as an environmental sample.

Blind sample - A sample submitted for analysis whose composition is known to the submitter but unknown to the analyst. A double blind sample is one of known composition that is submitted to the analyst in such a manner that neither its composition nor its identification as a check sample are known to the latter. A blind sample is one way to test the proficiency of a measurement process. Blind samples can be used to monitor the performance of an analytical system, check the analytical results of more than one laboratory, more than one analytical method, or the consistency of the same laboratory and method. Every blind sample analyzed should have an associated reference to the source and the possible dilution. Blind samples may be prepared from a reference material, as defined below.

Reference material - A material or substance, one or more properties of which are sufficiently well established, to be used for the assessment of a measurement method or for assigning values to materials.

Replicate (Duplicate) samples - A group of samples, collected in a manner such that the samples are thought to be essentially identical in composition. Replicate is the general case for which duplicate is the special case consisting of two samples. There are many types of replicate samples possible, each of which may yield slightly different results in a dynamic hydrologic setting, such as a flowing stream. The types of replicate samples are:

Concurrent samples - samples collected by two or more people collecting samples simultaneously, or by one person alternating subsamples between two or more collection bottles.

Sequential samples - a type of replicate sample in which the samples are collected one after the other, typically over a short time.

Split sample - a type of replicate sample in which a sample is split into subsamples contemporaneous in time and space.

Spike sample - A sample to which known concentrations of specific analytes have been added in such a manner as to minimize the change in the matrix of the original sample. Every spiked sample analyzed should have an associated reference to the spike solution and the volume added.

Spike solution - A solution with one or more well established analyte concentrations that is added in known quantities to an environmental sample to form a spike sample.

6.2 Identification of Quality-Assurance Data in NWIS

A system for identifying quality-assurance samples and maintaining the relationship with corresponding environmental samples has been established. The MEDIUM CODE, DATE, TIME and SAMPLE TYPE are used in the following manner to clearly identify all QA data:

Blank --

1. Use actual STATION NUMBER, DATE and TIME for blanks associated with a specific site and environmental sample. Use artificial STATION NUMBER, DATE and TIME for blanks that are associated with many sites and/or environmental samples. If more than one blank is analyzed, increment the TIME by 1 minute for each blank.
2. Use a MEDIUM CODE of Q (new code).
3. Use a SAMPLE TYPE of 2 (new code).
4. Use new parameter codes to designate which type of blank solution, the source of the blank solution, and the type of blank sample.
5. If more than one blank is collected, use parameters 82073 and 82074 to enter the same STARTING TIME and ENDING TIME for each blank. Parameters 99109 and 99110 can be used to enter the SAMPLE SET START DATE and SAMPLE SET END DATE for a blank associated with environmental samples collected on more than 1 day.

Blind --

1. Use actual STATION NUMBER, DATE and TIME for blinds associated with a specific site and environmental sample. Use artificial STATION NUMBER, DATE and TIME for blinds associated with many sites and/or environmental samples. If more than one blind is analyzed, increment the TIME by 1 minute for each blind.
2. Use a MEDIUM CODE from Q-Z (new codes).
3. Use a SAMPLE TYPE of 4 (new code).
4. Use new parameter codes to designate the source of the reference material and the source code number.
5. If more than one blind is collected or if a blind is related to more than one environmental sample, use parameters 82073 and 82074 to enter the same STARTING TIME and ENDING TIME for each blind. Parameters 99109 and 99110 can be used to enter the SAMPLE SET START DATE and SAMPLE SET END DATE for blind samples that are associated with environmental samples collected on more than 1 day.

Reference Material --

1. Assign an artificial STATION NUMBER.
2. Use the DATE and TIME that material was created or received.

3. Select a MEDIUM CODE from Q-Z (new codes).*
4. Use a SAMPLE TYPE of 6 (new code). An existing SAMPLE TYPE of 3 (reference) has been used in the past, but there were no standards for its use. The new SAMPLE TYPE of 5 (reference material) was added and should be used for all samples that fit the definition of reference material included in this documentation.
5. Use new parameter codes to designate the source of the reference material and the source code number.

Replicate --

1. Use the existing STATION NUMBER.
2. Use actual DATE and TIME for the 1st sample and increment TIME by 1 minute (or actual times if greater than 1 minute) for each additional sample.
3. Select a MEDIUM CODE from Q-Z (new codes).*
4. Use a SAMPLE TYPE of 7 for every sample, including the first one. A SAMPLE TYPE of 5 (duplicate) has been used in the past for the special case of replicates consisting of only two samples. The SAMPLE TYPE of 7 should be used for all samples that fit the definition of reference material included in this documentation.
5. Use a new parameter code for replicates to designate which of the methods was used to create the replicates.
6. Use the same STARTING TIME and ENDING TIME (parameters 82073 and 82074) for all samples.

* If the replicate samples will be stored in the regular data base, use normal MEDIUM CODES (i.e., 6 or 9) and a sample type of 6.

Spike --

1. Use actual STATION NUMBER, DATE and TIME for spikes associated with a specific site and environmental sample. Use artificial STATION NUMBER, DATE and TIME for spikes that are associated with many sites and/or environmental samples. If more than one spike is analyzed, increment the TIME by 1 minute for each spike.
2. Select a MEDIUM CODE from Q-Z (new codes).
3. Use a SAMPLE TYPE of 1.
4. Use new parameter codes to designate the source code number of the spike solution, the spike type, and the volume of the spike. Use an existing code (32000) to designate the sample volume.
5. If more than one spike is collected, use parameters 82073 and 82074 to enter the same STARTING TIME and ENDING TIME for each spike. Parameters 99109 and 99110 can be used to enter the SAMPLE SET START DATE and SAMPLE SET END DATE for blind samples that are associated with environmental samples collected on more than 1 day.

Spike Solution --

1. Assign an artificial STATION NUMBER.
2. Use the DATE and TIME that source was created or received.
3. Use a MEDIUM CODE of Q (new code).
4. Use a SAMPLE TYPE of 8 (new code).
5. Use new parameter codes to designate the source of the spike solution and the source code number of the spike solution.

A DISTRICT PROCESSING STATUS code of Z (local use only) should be assigned to each QA sample to prevent the data from being transferred to the national data base and subsequently to the EPA's STORET data base.

The following remark codes have been added to the system to allow further identification of some types of QA data:

- A Average value
- S Most probable value

Parameter code 99111, quality-assurance data indicator, can be stored with environmental samples to indicate that there are associated quality-assurance samples. The fixed values for 99110 indicate the type of quality-assurance samples associated with the environmental samples.

There are several existing parameter codes in addition to 82073 and 82074 mentioned in the identification of samples above that would clarify the nature of the sample (both environmental and QA samples). A list is provided below to encourage the use of these parameters. The definitions for the fixed-value parameters are in Appendix B.

- 00115 Sample Treatment
- 71999 Sample Purpose - fixed value
- 72005 Sample Source - fixed value
- 74200 Sample Preservation - fixed value
- 82075 Amount of rinse, in liters
- 82398 Sampling Method - fixed value
- 84164 Sampler Type - fixed value

The new parameter codes referenced in the sample identification are defined below:

- 99100 Blank, Type of solution (fixed value)
- 99101 Blank, Source of solution (fixed value)
- 99102 Blank, Type of sample (fixed value)
- 99103 Reference Material, Source (fixed value)
- 99104 Reference Material or Spike Source, Code Number
- 99105 Replicate, Type (fixed value)
- 99106 Spike, Type (fixed value)
- 99107 Spike, Source (fixed value)
- 99108 Spike Volume, in ul

6.3 Creating the Quality-Assurance Data Base

An alternate data base for quality-assurance data is recommended to prevent inadvertent retrievals of the QA data. The decision to establish an alternate data base must be made in conjunction with data base managers and/or the site administrator. Alternate data bases need to be considered in the general maintenance and operations of the system. Issues such as the possibility of duplicate data in the original data base and the alternate data base, and the intended use of the data in the alternate data base, should be addressed before the data base is created. An alternate data base can be created by using the menu within Ingres.

6.4 Entering and Editing Quality-Assurance Data

When the qafile data base exists, either of the two programs used to enter data from the lab into the main QWFILE automatically enters quality-assurance data into qafile. The **qw_enter** and **qw_cardsin** programs, when run from the **qwsystem** menu searches the *qwcards* file for analyses with a medium code of Q-Z. These analyses are separated and written to a new file called *qacards*. The *qwcards* file will be written to the assigned data base for the user. The *qacards* file will be written to the qafile directory. There will be two *watlist* files and two *badqw* files, and notes in the **qw_enter** or **qw_cardsin** como file that indicate the status of each process. If the process is not completed and a *qacards* file exists that has not been entered into the qafile, **qwsystem** menu option 10 (**qa_enter**) can be initiated to enter the cards.

CAUTION: You must first be assigned to the qafile data base before **qa_enter** is run, or it will write the *qacards* data to the assigned data base.

When the qafile data base does not exist, all data in *qwcards* are written to the assigned data base for the user.

Quality assurance data can be entered in qafile and edited with the standard entry and edit programs described in section 2.2 of this manual. The user must first be assigned to the qafile data base, which can be done using **qwdata** menu option 95, function 1.

6.5 Retrieving Quality-Assurance Data

Standard retrieval and processing programs in the NWIS system can be used with QA data. The user must be assigned to the qafile data base which can be done with **qwdata** menu option 95, function 1. For information on the retrieval, output and application programs available, see sections 2.3 and 5 through 5.10.

Environmental samples and quality assurance samples may be retrieved from their respective data bases and tabled together by using **qwdata** menu option 3, functions 8 and 9. These programs, **qwmdb_loc** and **qwmdb_tbl**, provide the same capabilities as the **qwsiterec** and **qwttable** programs (**qwdata** menu option 3, functions 3 and 6), but the information is drawn from two data bases instead of one.

The **qwmdb_loc** program requires entering the data-base numbers of the two data bases. The output will be one file of record numbers from records in both data bases with the data-base number in columns 9 and 10. The order of the record numbers will be based on the sort criteria specified. The details of the user input and options available are described in Section 2.3.8.

The **qwmdb_tbl** program requires input from the file output of the **qwmdb_loc** program. The details of the user input and options available are described in section 2.3.9.

To complete the programs, the user running either of these programs must have access to both data bases.

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7 Alternate Menus

The Water-Quality System has alternate menus for the data entry and retrieval programs. Following is information on those menus.

7.1 Interactive Programs for Data Entry and Retrieval -- System Command **qwmenu**

The programs in the **qwmenu** general-purpose data entry and retrieval system may be invoked by typing the program name on the command line or by selecting them from a menu displayed at the terminal. To display the menu, type:

qwmenu

In response to the qwmenu command the following menu is displayed:

```
QW DATA PROCESSING ROUTINE    REV NWIS(version no.)+YYYYMMDD
YOU ARE USING WATER-QUALITY DATABASE NUMBER 01
      1 -- ENTRY AND EDIT OF DATA
      2 -- RETRIEVAL AND OUTPUT OF DATA
      3 -- APPLICATIONS
      4 -- UTILITIES
      5 -- SUPPORT
     99 -- EXIT TO SYSTEM
```

Please enter a number from the above list or a Unix command:

This data-entry and retrieval menu has all the functions of the **qwdata** menu and was created to provide a more convenient system. The menu was planned to eventually replace the **qwdata** menu after users were familiar with the new look of the screen. Rather than repeat discussion of these programs for editing and retrieving data, a reference to the section where discussed is shown after each listed option. The different submenus are shown in Appendix F.

Function 1 -- Entry and Edit of Data

- Option 1 -- Login samples (sec. 2.1)
- Option 2 -- Enter Field Data (sec. 2.2.1)
- Option 3 -- Enter Miscellaneous Data (sec. 2.2.2)
- Option 4 -- Edit Sample Records (sec. 2.2.3)
- Option 5 -- Add/Update Sites in the Sitefile (sec. 2.2.5)

Function 2 -- Retrieval and Output of Data

- Option 1 -- Check QW Data Entry (sec. 2.3.1)
- Option 2 -- Make Loglist of QW Record Header Information (sec. 2.3.2)
- Option 3 -- Locate Sites and/or Samples (sec. 2.3.3)

- Option 4 -- Produce 1 and * card output (sec. 2.5.2)
- Option 5 -- Make a PSTAT data set (sec. 2.3.5)
- Option 6 -- Make water-quality tables (sec. 2.3.6)
- Option 7 -- Locate sites and/or samples from two databases (sec. 2.3.8)
- Option 8 -- Make water-quality tables of samples from two databases (sec. 2.3.9)

Function -- Applications

- Option 1 -- Produce flatfile output (sec. 5.7)
- Option 2 -- Produce flatfile output with method (sec. 2.5.5)
- Option 3 -- Create summary statistics tables (sec. 5.8)
- Option 4 -- Create detection limit tables (sec. 5.9)
- Option 5 -- Provide cation-ion balance table (sec. 2.3.4)
- Option 6 -- Run QWVALID to check data (sec. 2.3.7)
- Option 7 -- Plot routines
 - Option 1 -- Create and X-Y plot (sec. 5.1)
 - Option 2 -- Create boxplots (sec. 5.2)
 - Option 3 -- Create stiff diagrams (sec. 5.3)
 - Option 4 -- Create a piper diagram (sec. 5.4)
 - Option 5 -- Create a time-series plot (sec. 5.5)
 - Option 6 -- Create regression plots (sec. 5.6)
 - Option 7 -- Create flatfile output (sec. 5.7)
 - Option 8 -- Create summary statistic tables (sec. 5.8)
 - Option 9 -- Create detection limit tables (sec. 5.9)
 - Option 10 -- Statistic plot routines (sec. 5.10)
- Option 8 -- Datagraf -- Function no longer available (sec. 2.5.6)

Function -- Utilities

- Option 1 -- Change default database number (sec. 2.5.1)
- Option 2 -- Count QW records (sec. 2.2.6)
- Option 3 -- Flag approved samples (sec. 2.2.4)

Function -- Support

- Option 1 -- List site records (sec. 2.4.1)
- Option 2 -- Check parameter code dictionary (sec. 2.4.2)
- Option 3 -- List parameter code dictionary (sec. 2.4.3)
- Option 4 -- Check geologic unit codes (sec. 2.4.4)
- Option 5 -- Check FIPS codes (sec. 2.4.5)
- Option 6 -- List State/County data (sec. 2.4.6)
- Option 7 -- Dump parameter code dictionary (sec. 2.4.7)

7.2 Water-Quality Programs --System Command qwdbamenu

The programs in qwdbamenu may be invoked by selecting them from a menu displayed at the terminal by the command:

qwdbamenu

In response to the **qwdbamenu** command, the following menu is displayed:

```
QW DATA PROCESSING ROUTINE    REV NWIS(version no.)+YYYYMMDD

YOU ARE USING WATER-QUALITY DATABASE NUMBER 01

WATER-QUALITY OPTIONS

1 -- PROCESS STORET UPDATES      7 -- RUN QWCARDSIN TO PROCESS
                                         LOGGED IN SAMPLES
2 -- DELETE/CHANGE SITES        8 -- RUN QWENTER TO PROCESS
                                         UNLOGGED IN SAMPLES
3 -- FLAG APPROVED SAMPLES      9 -- RUN QACARDSIN TO PROCESS
                                         LOGGED IN SAMPLES FOR QAFILE
4 -- MPACK QW FILE OF          10 -- RUN QAENTER TO PROCESS UNLOGGED
                                         SELECTED DATABASE           IN SAMPLES FOR QAFILE
5 -- GET LAB DATA FROM         11 -- CHANGE DEFAULT DATABASE NUMBER
                                         CENTRAL LAB
6 -- RETRIEVE LABORATORY       99 -- EXIT TO SYSTEM

Please enter a number from the above list or a Unix command:
```

This data-entry and retrieval menu has all the functions of the **qwsystem** menu and was created to provide a more convenient system. The menu was planned to eventually replace the **qwsystem** menu after users had become familiar with the new screen look. Rather than repeat discussion of these programs for editing and retrieving data, a reference to the section where discussed is shown after each option. The different submenus are shown in Appendix F.

- Option 1 -- Process STORET Updates (sec. 4.3)
- Option 2 -- Delete/Change sites in the sitefile (sec. 4.5)
- Option 3 -- Flag approved samples (sec. 2.2.4)
- Option 4 -- MPACK QWFILE -- Function no longer available (sec. 4.6)
- Option 5 -- Retrieve data from Central Laboratory (sec. 3.1)
- Option 6 -- Retrieve laboratory data and costs (sec. 3.2)
- Option 7 -- Run qw_cardsin to process logged in samples (sec. 4.1)
- Option 8 -- Run qw_enter to process unlogged in samples (sec. 4.2)
- Option 9 -- Run qa_cardsin to process logged in QA samples (sec. 4.9)
- Option 10 -- Run qa_enter to process unlogged in QA samples (sec. 4.10)
- Option 11 -- Change default database number (sec. 2.5.1)

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8 Index of Programs

Table 12. Program names, task descriptions, and section numbers

Program Name	Task Description	Section
checkdb	System command to display database check menu	
mod.user_dbn_def	Change data-base number	2.5.1 , 4.7
mpack.check	No longer valid.	4-6
qa_enter	Update Quality-Assurance file	4.10
qa_cardsin	Process logged in quality-assurance samples	4.9
qw_cardsin	Enter Central Lab data	4.1
qa_sep_c	Separates QA cards from QWCARDS	
qa_sep_e	Separates QA cards from QWCARDS	
qwalert	Produce an alert limit table	4-8
qwbal	Sample list and/or balance	2.3.4
qwboxplot	Boxplots	5.2
qwepaout	Selects/reformats data for updates to EPA STORET	4.3
qwchange	Subsystem command of qwdata	2.2
qwchng.menu	Subsystem command of qwmenu	
qwckfips	Check FIPS Code file	2.4.5
qwckgeo	Check Geologic Unit Code file	2.4.4
qwckpcd	Check Parameter Code Dictionary	2.4.2
qwckstcty	List State/county data	2.4.6
qwcount	Count QW records	2.2.6
qwdata	System command for data entry/retrieval	2
qdbsa.menu	System command for QW system programs	
qwdetlims	Detection limits table	5.9
qwedit	Edit samples	2.2.3
qwepaout	Process EPA STORET updates	4.3
qw_enter	Update Water-Quality File	4.2
qwfield	Enter field data	2.2.1
qwfix	Correct existing precision codes in field values	2.2.3
qfixed	Produce 1 and *-cards	2.5.2 , 4.4
qwflag	Flag-approved samples	2.2.4
qwflatout	Flat file output	2.5.4, 5.7
qwflatoutm	Flat file output with method codes	2.5.5
qwgetlab	Retrieve Central Lab data	3.1
qwgraph	System command for graphic programs	2.5.3, 5
qwinput	Input miscellaneous data	2.2.2
qwlabs	System command for lab programs	3
qwlabcost	Accounting information (year-to-date)	3.3
qwlabs_menu	Subsystem command of qwdbamenu	
qwlabc purge	Purging accounting file	3.4
qwlabc week	Process laboratory accounting records	3.2
qwlist	Check entry	2.3.1
qwlogin	Login samples	2.1
qwloglist	Log list	2.3.2

Table 12. Program names, task descriptions, and section numbers--Continued

Program Name	Task Description	Section
qwmdb_loc	Locate data from multiple data bases	2.3.8
qwmdb_tbl	Multiple data base tables	2.3.9
qwmenu	System command for data entry/retrieval	
qwnumber	Returns current data base number	
qwpcedump	List Parameter Code Dictionary with precision codes	2.4.7
qwpclist	List Parameter Code Dictionary	2.4.3
qwpiper	Piper diagrams	5.4
qwplot	X,Y Plot	5.1
qwprcntl	Summary statistics table	5.8
qwpstat	Make a P-STAT data set	2.3.5
qwqueries	Subsystem command of qwdata	2.4
qwregress	Regression plots	5.6
qwstoret	Process EPA's STORET updates	4.3
qwretr_menu	Subsystem command for qwmenu	
qwretrieve	Subsystem command for qwdata	2.3
qwsitesite	List site records	2.4.1
qwsiterec	Locate sites and/or QW records	2.3.3
qwstatplot	Statistics plots	5.10
qwstiff	Stiff diagrams	5.3
qwstoret	Process EPA STORET updates	4.3
qwsupp_menu	System command for qwmenu	
qwsystem	System command for QW system programs	4
qwtable	Water-quality table	2.3.6
qwtplot	Time-series plots	5.5
qwutil	Subsystem command for qwmenu	2.5
qwutil_menu	Subsystem command for qwmenu	
qwutil_plot	Subsystem command for qwmenu	
qwvalid	Edit-validation program	2.3.7
stnchange	Change station numbers	4.5
stnup	Update Site File	2.2.5

Appendix A. Codes Used in Water-Quality Processing System

Table 13. Medium codes, descriptions, and definitions

Medium Code	Description	Definition
0	Not determined	
A	Artificial	Any substance that is not part of an aquatic environment and cannot be described by the Sample Medium Codes B-J or I-9
B	Solids (street sweepings, etc.)	Dry unconsolidated materials that are collected from a street or paved area, including the total array of materials that are collected as part of a "clean sweep," and cannot be described by Sample Medium Codes C-J or 1-9.
C	Animal tissue	Any type of tissue that comprises either whole or parts of insects, fish, or other organisms living in an aquatic environment, or warm bodied animals that may or may not have been collected from a water body.
D	Plant tissue	Any type of non-animal tissue that comprises either whole or parts of plants, aquatic or non-aquatic.
E	Core material	Consolidated or unconsolidated material removed from a pipe or casing during a drilling (core) operation.
F	Interstitial water	Water occurring in the small openings, spaces, and voids between particles of unconsolidated materials in that portion of the vadose water zone between the root zone and the water table. The water is held in place by entrapment, ionic attraction, and capillary or adhesive forces, rather than from upward pressure components of saturation.
G	Soil	A wet or dry substance composed of unconsolidated fine grain rock fragments (minerals) and organic material that has been modified sufficiently by physical, chemical, or biological processes to support terrestrial plant growth.
H	Bottom material	A mixture of mineral and organic matter that compose the top bed deposits (usually the first few inches) underlying a body of water.
J	Sludge	An unconsolidated material, from an anthropogenic source, covering the ground or the bed of a water body, usually originating as a result of processes such as domestic or industrial waste treatment.
K	Soil Moisture	Water occupying voids between loose soil particles within the aerated root zone. The water is held in place by surface tension, capillary and hydroscopic forces in opposition to the pull of gravitational forces.
L-P	Taxonomic data (L) Phytoplanktonic species composition and enumeration (M) Phytoplanktonic species composition (N) Periphytic species composition (O) Benthic invertebrates species composition and enumeration (P) Periphytic diatoms species composition and enumeration	Biological data distinct from non-taxonomic data which cannot be described by Sample Medium Codes A-K or I-9.

Table 13. Medium codes, descriptions, and definitions--Continued

Medium Code	Description	Definition
Q-Z	Quality-assurance sample (Q) Artificial (R) Surface water (S) Ground water (T) Wet deposition (U) Bulk deposition (V) Suspended sediment (W) Bottom material (X) Animal tissue (Y) Plant tissue (Z) Interstitial water	Blank samples taken to ensure that environmental samples have not been contaminated by the data-collection process.
1	Suspended sediment	Sediment carried in suspension by the turbulent components of the fluid or by the Brownian movement (a law of physics).
2	Leachate	A solution obtained by passing a liquid (usually aqueous) through an unconsolidated solid medium, thereby dissolving materials (from the solid medium) which become a part of the solution. It also contains those precipitates that are the result of the solution process and subsequent chemical or biological reactions.
3	Dry deposition	Solid, aerosol or gaseous materials deposited from the atmosphere during dry weather periods.
4	Landfill effluent	A liquid material (usually water) that is drained or pumped from a landfill. It usually is a liquid that has percolated through solid landfill material to become a transport medium for materials dissolved from the landfill.
5	Elutriation	A process by which a mixture of an unconsolidated solid medium (usually soil) and a liquid medium (usually water) has been agitated for a given period of time to dissolve materials from the solid. The solid/liquid mixture is finally separated and the resulting solution is analyzed for materials dissolved during the elutriation process.
6	Ground water	Water below the surface of the earth contained in the saturated zone. It does not include soil moisture or interstitial water.
7	Wet deposition	Water reaching the earth's surface through precipitation as rain, snow, sleet, hail or condensation of fog and dew. The water may contain undissolved particulate and gaseous materials acquired from the atmosphere during precipitation.
8	Bulk deposition	A mixture of undesigned proportions of wet and dry deposition sampled by a continuously open container.
9	Surface water	Water on the surface of the earth stored or transported in rivers, streams, estuaries, lakes, ponds, swamps, glaciers or other aquatic areas. It also may refer to water in urban drains and storm-sewer systems.

Table 14. Quality Assurance Codes

Code	Description
A	Not reported
B	Non-USGS lab value--failed edit
C	Non-USGS field value--failed edit
D	USGS lab value--failed edit
E	USGS field value--failed edit
F	Non-USGS lab value--in review
G	Non-USGS field value--in review
H	USGS lab value--in review
I	USGS field value--in review
1	Non-USGS lab value--approved for transfer to EPA STORET
2	Non-USGS field value--approved for transfer to EPA STORET
3	USGS lab value--approved for transfer to EPA STORET
4	USGS field value--approved for transfer to EPA STORET

Table 15. Hydrologic Condition Codes

Code	Description
A	Not determined
4	Stable, low stage
5	Falling stage
6	Stable, high stage
7	Peak stage
8	Rising stage
9	Stable, normal stage

Table 16. Hydrologic Event Code

Code	Description
A	Spring breakup
B	Under ice cover
C	Glacial lake outbreak
D	Mudflow
E	Tidal action
H	Dambreak
J	Storm
1	Drought
2	Spill
3	Regulated flow
4	Snowmelt
5	Earthquake
6	Hurricane
7	Flood
8	Volcanic action
9	Routine sample

Table 17. Sample Type Codes

Code	Description
A	Not determined
B	Other QA
H	Composite (time)
1	Spike
2	Blank
3	Reference
4	Blind
5	Duplicate
6	Reference Material
7	Replicate
8	Spike solution
9	Regular

Table 18. Analysis Types

Type	Description
CH	Chemical
BI	Biological
SE	Sediment
NU	Nutrients
PE	Pesticides
BE	Bed material
ME	Metals
RA	Radiochemical

Table 19. Analysis Status Codes

Code	Description
A	Not determined
H	Initial entry
1	Retrieved, in review
3	Data in temporary hold status
7	Reviewed, approved for transfer to EPA STORET
9	Proprietary data (Regional Hydrologist approval required)

Table 20. Analysis Source Codes

Code	Description
A	Not determined
B	Non-USGS field only
C	Non-USGS lab only
D	Non-USGS lab and field
F	USGS field and non-USGS field
G	USGS field and non-USGS lab
H	USGS field and non-USGS lab and field
1	USGS lab and non-USGS field
2	USGS lab and non-USGS lab
3	USGS lab and non-USGS lab and field
4	USGS lab and field and non-USGS field
5	USGS lab and field and non-USGS lab
6	USGS lab and field and non-USGS lab and field
7	USGS field only
8	USGS lab only
9	USGS lab and field

Table 21. Valid District Processing Status Codes

Code	Description
N	New record
F	Field data
L	Laboratory data
P	Pending approval
R	Ready to transmit to Reston
T	Transmitted
Z	Local-use data

Table 22. Remark Codes

Code	Description
Blank	Not remarked
0,E	Estimated value
1,<	Actual value is known to be less than the value shown.
2,>	Actual value is known to be greater than the value shown.
3,M	Presence of material verified but not quantified
4,N	Presumptive evidence of presence of material
U,ND	Material specifically analyzed for but not detected
B,K	Results based on colony count outside the acceptable range (non-ideal colony count)
A	Mean value
V	Analyte was detected in both the environmental sample and the associated blanks. (see Office of Water Quality Memorandum 97.8)
S	Most probable value
L	Biological organism count less than 0.5 percent (may be only observed)
D	Biological organism count equal to or greater than 15 percent (dominant)
&	Biological organism estimated as dominant
#	Delete the remark
X	Delete the parameter on Reston update.

Table 23. Site-Type Codes

Codes	Types
SW	Stream
GW	Well
SP	Spring
LK	Lake or reservoir
ES	Estuary
ME	Meteorological
SS	Specific source
OF	Outfall
DV	Diversion
LA	Land application
AG	Aggregate ground water
AS	Aggregate surface water
PL	Water use/Place of use

Table 24. Primary Use of Site Codes

Code	Description	Definition
A	Anode	Anode is a hole used as an electrical anode. Include in this category wells used solely to ground pipelines or electronic relays and other installations.
C	Standby emergency supply	Standby emergency supply refers to a water-supply source that is used only when the principal supplier of water is unavailable.
D	Drain	Drainage refers to the drainage of surface water underground.
E	Geothermal	Geothermal well is a hole drilled for geothermal energy development. Use this category for “dry” geothermal wells or wells into which water is injected for heating. For “wet” geothermal wells, through which water is withdrawn, use “W - withdrawal of water” for the use of site, and “E - power generation” for the primary use of water.
G	Seismic	Seismic hole is one drilled for seismic exploration. If it has been converted to water supply, it is used to withdraw water. A seismic hole used as an observation well should be in the observation-well category.
H	Heat reservoir	Heat reservoir refers to a well in which a fluid is circulated in a closed system. Water is neither added to, nor removed from, the aquifer.
M	Mine	Mine includes any tunnel, shaft, or other excavation constructed for the extraction of minerals.
O	Observation	Observation well is a cased test-hole or well, drilled for either water-level or water-quality observations. Do not use this category for an oil-test hole, or water-supply well used only incidentally as an observation well.
P	Oil or gas well	Oil or gas well is any well or hole drilled in search of, or for production of, petroleum or gas. It includes any oil or gas production well, dry hole, core hole, injection well drilled for secondary recovery of oil, etc. An oil-test hole converted to a water-supply well should be classified as withdrawal (W).
R	Recharge	Recharge site is a site constructed or converted for use in replenishing the aquifer. An irrigation well used to return water to the aquifer during nonpumping periods is a well for withdrawing water, not a drainage or recharge well. Use this category for wells that are used to return water to the aquifer after use, such as those for returning air-conditioning water.
S	Repressurize	Repressurize refers to pumping water into an aquifer in order to increase the pressure in the aquifer for a specific purpose; for example, water flood purposes in oil fields.
T	Test	Test hole is an uncased hole (or one cased only temporarily) that was drilled for water, or for geologic or hydrogeologic testing. It may be equipped temporarily with a pump in order to make a pumping test, but if the well is destroyed after testing is completed, it is still a test hole. A core hole drilled as a part of mining or quarrying exploration work should be in this class.
U	Unused	An unused site is an abandoned water-supply site or one for which no use is contemplated. At an abandoned farmstead, a well originally used for domestic purposes may be classed as unused, even though it is equipped with a pump. Similarly, a stock well with a pump may become unused when a pasture or corral is put into cultivation. An irrigation well that is not equipped with a pump, nor used because the yield is too low or the water is too mineralized, belongs in this class.
W	Withdrawal of water	Withdrawal of water refers to a site that supplies water for one of the purposes shown under use of water. It includes a dewatering well, if the dewatering is accomplished by pumping ground water.

Table 24. Primary Use of Site Codes--Continued

Code	Description	Definition
X	Waste disposal	A waste-disposal site is one used to convey industrial waste, domestic sewage, oil-field brine, mine drainage, radioactive waste, or other waste fluid into an underground zone. An oil-test or deep-water well converted to waste disposal should be in this category.
Z	Destroyed	A destroyed site is one that is no longer in existence. The casing of most destroyed wells will be pulled, but some may be plugged or filled. Do not use this category for an abandoned site that merely is not in use.

Table 25. Primary Use of Water Codes

Code	Description	Definition
A	Air conditioning	Air conditioning refers to water supply used solely or principally for heating or cooling a building. Water used to cool industrial machinery belongs in the industrial category, not in the air-conditioning category.
B	Bottling	Bottling refers to the storage of water in bottles and use of the water for potable purposes (see Medicinal).
C	Commercial	Commercial use refers to use by a business establishment that does not fabricate or produce a product. Filling stations and motels are examples of commercial establishments. If some product is manufactured, assembled, remodeled, or otherwise fabricated, use of water for that plant should be considered industrial, even though the water is not used directly in the product or in the manufacturing of the product.
D	Dewater	Dewatering means the water is pumped for dewatering a construction or mining site, or to lower the water table for agricultural purposes. In this respect, it differs from a drainage well that is used to drain surface water underground. If the main purpose for which the water is withdrawn is to provide drainage, dewatering should be indicated even though the water may be discharged into an irrigation ditch and subsequently used to irrigate land.
E	Power	Power generation refers to use of water for generation of any type of power.
F	Fire	Fire protection refers to the principal use of the water and should be indicated if the site was constructed principally for this purpose, even though the water may be used at times to supplement an industrial or defense supply, to irrigate a golf course, fill a swimming pool, or for other use.
H	Domestic	Domestic use is water used to supply household needs, principally for drinking, cooking, washing, and sanitary purposes, but including watering a lawn and caring for a few pets. Most domestic wells will be at suburban or farm homes, but wells supplying small quantities of water for domestic purposes for one-classroom schools, turnpike gates, and similar installations, should be in the domestic category.
I	Irrigation	Irrigation refers to the use of water to irrigate cultivated plants. Most irrigation sites will supply water for farm crops, but the category should include wells used to water the grounds of schools, industrial plants, or cemeteries, if more than a small amount of water is pumped and that is the sole use of the water.
J	Industrial (cooling)	Industrial cooling refers to a water supply used solely for industrial cooling.
K	Mining	Mining refers to a water supply used solely for mining purposes.

Table 25. Primary Use of Water Codes--Continued

Code	Description	Definition
M	Medicinal	Medicinal refers to water purported to have therapeutic value. Water may be used for bathing and/or drinking. If use of water is mainly because of its claimed therapeutic value, use this category even though the water is bottled.
N	Industrial	Industrial use is within a plant that manufactures or fabricates a product. The water may or may not be incorporated into the product being manufactured. Industrial water may be used to cool machinery, to provide sanitary facilities for employees, to air-condition the plant, and to irrigate the ground at the plant.
P	Public supply	Public Supply use is water that is pumped and distributed to several homes. Such supplies may be owned by a municipality or community, a water district, or a private concern. In most States, public supplies are regulated by departments of health which enforce minimum safety and sanitary requirements. If the system supplies five or more homes, it should be considered a public supply, as four or less classify use as domestic. Water supplies for trailer or summer camps with five or more living units should be in this category, but motels and hotels are classified as commercial. Most public supply systems also furnish water for a variety of other uses, such as industrial, institutional, and commercial.
Q	Aquaculture	Aquaculture refers to a water supply used solely for aquaculture, such as fish farms.
R	Recreation	Recreation refers to water discharged into pools (or channels which are dammed downstream to form pools), for swimming, boating, fishing, ice rinks, and other recreational uses.
S	Stock	Stock Supply refers to the watering of livestock.
T	Institutional	Institutional refers to water used in the maintenance and operation of institutions such as large schools, universities, hospitals, rest homes, or similar installations. Owners of institutions may be individuals, corporations, churches, or governmental units.
U	Unused	Unused means water is not being removed from the site for one of the purposes described above. A test hole, oil or gas well, recharge, drainage, observation, or waste-disposal well will be in this category. Do not use this classification for an irrigation, domestic, stock, or other well during "off season" or temporary periods of nonuse. The use of water from a newly constructed site should be considered as the use for which it is intended even though it may not yet be in use when inventoried.
Y	Desalination	Desalination refers to water used in a desalting process whereby dissolved solids are removed to make water potable or suitable for other uses. Enter the type of use of the desalinated water in the next column, "Secondary Water Use".
Z	Other (explain in remarks)	Other refers to miscellaneous uses not included in the listed categories.

Appendix B. Fixed Value Codes

Table 26. Parameter codes, fixed values, and parameter names

Parm	Fixed	
Code	Values	Parameter Name
00027	COLLECTING AGENCY	
00027	300	NAPD/NTN - NAT.ATMOS.DEPOSITION PROGRAM/NAT.TRENDS NETWORK
00027	500	DEPARTMENT OF AGRICULTURE
00027	504	AGRICULTURAL RESEARCH SERVICE
00027	520	SOIL CONSERVATION SERVICE
00027	596	FOREST SERVICE
00027	600	DEPARTMENT OF COMMERCE
00027	642	NATIONAL INDUSTRIAL POLLUTION CONTROL COUNCIL
00027	648	NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
00027	655	NATIONAL BUREAU OF STANDARDS
00027	700	DEPARTMENT OF DEFENSE - MILITARY
00027	701	AIR FORCE
00027	702	ARMY
00027	703	MARINES
00027	704	NAVY
00027	800	DEPARTMENT OF DEFENSE - CIVIL
00027	810	CORPS OF ENGINEERS
00027	900	DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
00027	910	FOOD AND DRUG ADMINISTRATION
00027	915	ENVIRONMENTAL HEALTH SERVICE
00027	930	NATIONAL INSTITUTES OF HEALTH
00027	1000	DEPARTMENT OF THE INTERIOR
00027	1004	BUREAU OF LAND MANAGEMENT
00027	1008	BUREAU OF INDIAN AFFAIRS
00027	1016	BUREAU OF OUTDOOR RECREATION
00027	1028	GEOLOGICAL SURVEY
00027	1032	BUREAU OF MINES
00027	1050	BUREAU OF SPORT FISHERIES AND WILDLIFE
00027	1053	NATIONAL PARK SERVICE
00027	1060	BUREAU OF RECLAMATION
00027	1062	ALASKA POWER ADMINISTRATION
00027	1064	BONNEVILLE POWER ADMINISTRATION
00027	1068	SOUTHEASTERN POWER ADMINISTRATION
00027	1072	SOUTHWESTERN POWER ADMINISTRATION
00027	1076	OFFICE OF SALINE WATER
00027	1086	OFFICE OF WATER RESOURCES RESEARCH
00027	1800	ATOMIC ENERGY COMMISSION
00027	2000	ENVIRONMENTAL PROTECTION AGENCY
00027	2100	DEPARTMENT OF TRANSPORTATION
00027	2300	GENERAL SERVICES ADMINISTRATION
00027	2500	DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
00027	2555	U.S. Public Health Service, Division of Indian Health
00027	2700	NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
00027	3315	TENNESSEE VALLEY AUTHORITY

Appendix B: Fixed Value Codes

<u>Parm</u>	<u>Fixed</u>		<u>Parameter Name</u>
<u>Code</u>	<u>Values</u>		
00027	3335	WATER RESOURCES COUNCIL	
00027	6001	ASSOCIATION OF BAY AREA GOVERNMENTS, CALIFORNIA	
00027	6003	ALAMEDA CO. FLOOD CONTROL AND WATER CONSERVATION DIST., CA	
00027	6005	EAST BAY REGIONAL PARK DISTRICT, CA	
00027	6006	EAST BAY MUNICIPAL UTILITY DISTRICT, OAKLAND CA	
00027	6010	CA REGIONAL WATER QUALITY CONTROL BOARD NORTH COAST REGION	
00027	6015	UNITED WATER CONSERVATION DISTRICT, SANTA PAULA CA	
00027	6020	SANTA CLARA VALLEY WATER DISTRICT, CALIFORNIA	
00027	9700	STATE HEALTH LABORATORY (00 = STATE CODE)	
00027	9701	ALABAMA	
00027	9702	ALASKA	
00027	9704	ARIZONA	
00027	9705	ARKANSAS	
00027	9706	CALIFORNIA	
00027	9708	COLORADO	
00027	9709	CONNECTICUT	
00027	9710	DELAWARE	
00027	9711	DISTRICT OF COLUMBIA	
00027	9712	FLORIDA	
00027	9713	GEORGIA	
00027	9715	HAWAII	
00027	9716	IDAHO	
00027	9717	ILLINOIS	
00027	9718	INDIANA	
00027	9719	IOWA	
00027	9720	KANSAS	
00027	9721	KENTUCKY	
00027	9722	LOUISIANA	
00027	9723	MAINE	
00027	9724	MARYLAND	
00027	9725	MASSACHUSETTS	
00027	9726	MICHIGAN	
00027	9727	MINNESOTA POLLUTION CONTROL COUNCIL	
00027	9728	MISSISSIPPI	
00027	9729	MISSOURI	
00027	9730	MONTANA	
00027	9731	NEBRASKA	
00027	9732	NEVADA	
00027	9733	NEW HAMPSHIRE	
00027	9734	NEW JERSEY	
00027	9735	NEW MEXICO	
00027	9736	NEW YORK	
00027	9737	NORTH CAROLINA	
00027	9738	NORTH DAKOTA	
00027	9739	OHIO	
00027	9740	OKLAHOMA	
00027	9741	OREGON	
00027	9742	PENNSYLVANIA	
00027	9744	RHODE ISLAND	
00027	9745	SOUTH CAROLINA	
00027	9746	SOUTH DAKOTA	

Parm Code	Fixed Values	Parameter Name
00027	9747	TENNESSEE
00027	9748	TEXAS
00027	9749	UTAH
00027	9750	VERMONT
00027	9751	VIRGINIA
00027	9753	WASHINGTON
00027	9754	WEST VIRGINIA
00027	9755	WISCONSIN
00027	9756	WYOMING
00027	9760	AMERICAN SAMOA
00027	9761	CANAL ZONE
00027	9762	CANTON AND ENDERBURY ISLANDS
00027	9766	GUAM
00027	9767	JOHNSTON ATOLL
00027	9771	MIDWAY ISLANDS
00027	9772	PUERTO RICO
00027	9773	RYUKYU ISLANDS, SOUTHERN
00027	9774	SWAN ISLANDS
00027	9775	TRUST TERRITORIES OF THE PACIFIC ISLANDS
00027	9776	U.S. MISCELLANEOUS CARIBBEAN ISLANDS
00027	9777	U.S. MISCELLANEOUS PACIFIC ISLANDS
00027	9778	VIRGIN ISLANDS
00027	9779	WAKE ISLAND
00027	9780	MEXICO
00027	9781	TAMAULIPAS
00027	9782	NUEVO LEON
00027	9783	COAHUILA
00027	9784	CHIHUAHUA
00027	9785	SONORA
00027	9786	BAJA CALIFORNIA NORTE
00027	9790	NEW BRUNSWICK
00027	9791	QUEBEC
00027	9792	ONTARIO
00027	9793	MANITOBA
00027	9794	SASKATCHEWAN
00027	9795	ALBERTA
00027	9796	BRITISH COLUMBIA
00027	9797	YUKON
00027	9801	PRIVATE LABORATORY
00027	9802	SALT RIVER VALLEY USERS ASSOCIATION
00027	9803	METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA
00027	9804	FLORIDA DEPARTMENT OF POLLUTION CONTROL
00027	9805	CENTRAL AND SOUTHERN FLORIDA FLOOD CONTROL DISTRICT
00027	9806	FLORIDA GAME AND FRESH WATER FISH COMMISSION
00027	9807	FLORIDA DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
00027	9808	SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
00027	9809	CITY OF JACKSONVILLE, FLORIDA
00027	9810	REEDY CREEK IMPROVEMENT DISTRICT, FLORIDA
00027	9811	ORANGE COUNTY POLLUTION CONTROL DEPARTMENT, FLORIDA
00027	9812	BREVARD COUNTY POLLUTION CONTROL DEPARTMENT, FLORIDA
00027	9813	PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES

Appendix B: Fixed Value Codes

Parm	Fixed	
Code	Values	Parameter Name
00027	9814	ALASKA DEPARTMENT OF FISH AND GAME
00027	9815	ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
00027	9816	CALIFORNIA DEPARTMENT OF WATER RESOURCES
00027	9817	ORANGE COUNTY WATER DISTRICT, CALIF.
00027	9818	HILLSBOROUGH COUNTY ENVIRONMENTAL PROTECTION COMM. FL
00027	9819	NASSAU COUNTY DEPARTMENT OF HEALTH, NY
00027	9820	SUFFOLK COUNTY DEPARTMENT OF HEALTH, NY
00027	9821	SUFFOLK COUNTY DEPARTMENT OF ENVIR. CONTROL, NY
00027	9822	SUFFOLK COUNTY WATER AUTHORITY, NY
00027	9823	ALAMEDA COUNTY WATER DISTRICT, CA
00027	9824	ALAMEDA CO. FLOOD CONTROL & WATER CONSER. DIST, ZONE 7, CA
00027	9825	VALLEY COMMUNITY SERVICES DISTRICT (LIVERMORE), CA
00027	9826	CITY OF LIVERMORE WASTE TREATMENT PLANT, CA
00027	9827	ARKANSAS DEPARTMENT OF POLLUTION CONTROL AND ECOLOGY
00027	9828	ARKANSAS GAME AND FISH COMMISSION
00027	9829	NASSAU COUNTY DEPARTMENT OF PUBLIC WORKS, N.Y.
00027	9831	UNIVERSITY OF IOWA, STATE HYGIENIC LABORATORY
00027	9902	UNIVERSITY OF ARIZONA
00027	9903	UNIVERSITY OF FLORIDA
00027	9904	FLORIDA STATE UNIVERSITY
00027	9905	FLORIDA TECHNOLOGICAL UNIVERSITY
00027	9906	UNIVERSITY OF ALASKA
00027	12001	CITY OF TAMPA, FLORIDA
00027	12002	CITY OF VERO BEACH, FLORIDA
00027	12005	CITY OF TALLAHASSEE, FLORIDA
00027	12007	ITT COMMUNITY DEVELOPMENT CORPORATION, FLORIDA
00027	12010	PALM BEACH COUNTY ENGINEER
00027	12020	PALM BEACH COUNTY HEALTH DEPT.
00027	12030	DADE COUNTY DEPT. OF ENV. RESOURCES MAN.
00027	16001	IDAHO DEPARTMENT OF WATER RESOURCES
00027	16002	IDAHO DEPARTMENT OF HEALTH AND WELFARE
00027	17001	METROPOLITAN SANITARY DIST. OF GREATER CHICAGO(MSD)
00027	17002	ILLINOIS ENVIRONMENTAL PROTECTION AGENCY (IEPA)
00027	17003	ILLINOIS STATE WATER SURVEY (ISWS)
00027	17004	INTERSURVEY GEOTECHNICAL LAB, IGS
00027	18001	INDIANA DEPT. ENV. MGMT., DRINKING WATER BRANCH, GW SECTION
00027	18002	INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT (IDEM)
00027	18003	INDIANA GEOLOGICAL SURVEY (IGS)
00027	18004	INDIANA DEPARTMENT OF NATURAL RESOURCES (IDNR)
00027	18005	INDIANAPOLIS DEPARTMENT OF PUBLIC WORKS, INDIANA (IDPW)
00027	18006	PURDUE UNIVERSITY, LAFAYETTE, INDIANA
00027	18007	INDIANA UNIVERSITY, BLOOMINGTON, INDIANA
00027	18008	BALL STATE UNIVERSITY, MUNCIE, INDIANA
00027	18009	ST. JOSEPH RIVER BASIN COMMISSION, INDIANA
00027	20001	KANSAS STATE GEOLOGICAL SURVEY
00027	21001	GEOLOGICAL SURVEY OF KENTUCKY
00027	25001	BARNSTABLE COUNTY HEALTH DEPARTMENT, MASS.
00027	25003	LEO LAB, MASS
00027	27001	Minn. Department of Natural Resources (DNR), St. Paul, MN
00027	27002	Minn. DNR, Waters Division, St. Paul, MN
00027	27003	Minn. DNR, Fish and Wildlife Division, St. Paul, MN

Parm	Fixed		Parameter Name
Code	Values		
00027	27004		Minn. DNR, Forestry Division, St. Paul, MN
00027	27005		Minn. DNR, Minerals Division, St. Paul, MN
00027	27010		Minn. Pollution Control Agency (PCA), St. Paul, MN
00027	27011		Minn. PCA, Water Quality Division, St. Paul, MN
00027	27012		Minn. PCA, Solid/Hazardous Waste Division, St. Paul, MN
00027	27013		Minn. PCA, Air Quality Division, St. Paul, MN
00027	27020		Minn. Department of Health, Minneapolis, MN
00027	27030		Minn. Geological Survey, St. Paul, MN
00027	27035		Univ. of Minnesota, Minneapolis-St. Paul, MN
00027	27036		Univ. of Minn., Geology and Geophysics, Minneapolis, MN
00027	27038		Univ. of Minn., Gray Freshwater Bio. Inst., Navarre, MN
00027	27039		Univ. of Minn., Soil Science St. Paul, MN
00027	27040		Univ. of Minn., Agricultural Engineering, St. Paul, MN
00027	27041		Univ. of Minn., Ecol., Evol., and Behavior, St. Paul, MN
00027	27050		Metropolitan Waste Control Commission, St. Paul, MN
00027	28001		OFFICE OF POLLUTION CONTROL, MISSISSIPPI
00027	28002		OFFICE OF GEOLOGY, MISSISSIPPI
00027	28003		OFFICE OF LAND AND WATER RESOURCES, MISSISSIPPI
00027	29001		MISSOURI DEPT OF NATURAL RESOURCES, DIV OF ENVIR. QUALITY
00027	30010		MONTANA BUREAU OF MINES AND GEOLOGY
00027	30020		MONTANA DEPT. OF FISH WILDLIFE AND PARKS
00027	30030		MONTANA DEPT. OF HEALTH/ENV. SCIENCES, WATER QUALITY BUREAU
00027	30040		MONTANA AGRICULTURAL RESEARCH CENTER
00027	30050		MONTANA TUNNELS MINING, INC., WICKES, MT
00027	30060		WATER CONSULTING, INC., HAMILTON, MT
00027	31001		NEBRASKA DEPARTMENT OF ENVIRONMENTAL CONTROL LABORATORY
00027	32001		NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
00027	32003		NEVADA DIVISION OF WATER RESOURCES
00027	32005		UNIV. OF NEV., DIV. OF RENEW. NAT. RESOURCES
00027	32006		NEVADA BUREAU OF ENVIRONMENTAL HEALTH
00027	32007		NEVADA BUREAU OF MINES & GEOLOGY
00027	32009		NEVADA DEPARTMENT OF FISH & GAME
00027	32010		NEVADA DIVISION OF FORESTRY
00027	32011		NEVADA DIVISION OF PARKS
00027	32012		NEVADA CONSUMER HEALTH PROTECTION SERVICE
00027	32013		UNIV. OF NEV., DESERT RESEARCH INSTITUTE
00027	32014		UNIV. OF NEV., COLLEGE OF AGRICULTURE
00027	32015		CLARK COUNTY DISTRICT HEALTH DEPARTMENT, NEVADA
00027	32016		WASHOE COUNTY DISTRICT HEALTH DEPARTMENT, NEVADA
00027	32017		LAS VEGAS VALLEY WATER DISTRICT, NEVADA
00027	32018		SIERRA PACIFIC POWER CO., NEVADA
00027	32019		NEVADA BUREAU OF LABORATORIES AND RESEARCH
00027	32020		WASHOE COUNTY UTILITIES, RENO, NV
00027	32021		CARSON CITY PUBLIC WORKS, CARSON CITY, NV
00027	32022		TRUCKEE MEADOWS WATER RECLAMATION FACILITY, RENO, NV
00027	32091		WASHOE COUNTY COG, NEVADA
00027	32092		CLARK COUNTY COG, NEVADA
00027	32093		MUNICIPAL WATER COMPANY, NEVADA
00027	34001		NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
00027	34002		ROY F. WESTON INC. WEST CHESTER, PA
00027	34003		BOOTH, GARRETT, AND BLAIR INC., AMBLER, PA

Parm	Fixed		Parameter Name
Code	Values		
00027	34004	CAPE MAY COUNTY, NJ, DEPARTMENT OF HEALTH	
00027	34005	CAPE MAY COUNTY, NJ, PLANNING BOARD	
00027	36010	NEW YORK DEPARTMENT OF HEALTH	
00027	36012	NEW YORK DEPT. OF ENVIRONMENTAL CONSERVATION, ALBANY, NY	
00027	36020	NASSAU COUNTY, DEPARTMENT OF PUBLIC WORKS	
00027	38001	NORTH DAKOTA GEOLOGICAL SURVEY	
00027	38002	NORTH DAKOTA STATE WATER COMMISSION	
00027	38003	NORTH DAKOTA STATE HEALTH DEPARTMENT	
00027	40810	CORPS OF ENGINEERS, TULSA DISTRICT	
00027	41000	CITY OF PORTLAND, BUREAU OF WATER WORKS	
00027	42010	CITY OF PHILADELPHIA, PA.	
00027	42011	SUSQUEHANNA RIVER BASIN COMMISSION	
00027	42012	Volunteer Citizen Group, Lancaster, PA	
00027	46001	SOUTH DAKOTA STATE UNIVERSITY SOILS LABORATORY	
00027	46002	SOUTH DAKOTA WATER RESOURCES INSTITUTE	
00027	46003	SOUTH DAKOTA AGRICULTURAL EXPERIMENT STATION	
00027	46004	SOUTH DAKOTA STATE CHEMIST	
00027	46005	SOUTH DAKOTA SCHOOL OF MINES AND TECHNOLOGY	
00027	46006	SOUTH DAKOTA STATE UNIVERSITY, DEPT. STATION BIOCHEMISTRY	
00027	46007	SOUTH DAKOTA DIVISION OF WATER RIGHTS	
00027	46008	SOUTH DAKOTA GEOLOGICAL SURVEY, VERMILLION, SD	
00027	46009	SOUTH DAKOTA DEPARTMENT OF HEALTH	
00027	47001	UNIVERSITY OF TENNESSEE AT KNOXVILLE	
00027	55555	INDIVIDUAL	
00027	66666	DRILLER	
00027	80000	QA PROJECT	
00027	80003	INST. TECH. HERNPHYSIK, DORMSTADT, FEDERAL REPUBLIC OF GERM	
00027	80010	ATLANTA CENTRAL LABORATORY, GA	
00027	80020	DENVER CENTRAL LABORATORY, CO	
00027	80055	IEAE, VIENNA, AUSTRIA	
00027	80088	RADIOACTIVE DATING LAB, GEOL. SURVEY, SWEDEN-FRESCATTI	
00027	80113	DISTRICT WATER-QUALITY LAB, TUSCALOOSA, ALABAMA	
00027	80141	GEOLOGICAL SURVEY OF ALABAMA	
00027	80201	Alaska Division of Geologic and Geophysical Surveys (DGGS)	
00027	80203	Chemical and Geological Laboratories of Alaska	
00027	80205	Northern Test Lab (Soldotna, Alaska)	
00027	80213	DISTRICT WATER-QUALITY LAB, ANCHORAGE, ALASKA	
00027	80410	CITY OF TUCSON, AZ	
00027	80413	DISTRICT WATER-QUALITY LAB, YUMA, ARIZONA	
00027	80415	ARIZ. DEPT. OF ENVIRONMENTAL QUALITY	
00027	80417	ARIZ. DEPT. OF WATER RESOURCES	
00027	80501	OUACHITA BAPTIST UNIVERSITY, ARKADELPHIA, ARKANSAS	
00027	80503	UNIVERSITY OF ARKANSAS, DEPT. OF ENGINEERING, FAYETTEVILLE	
00027	80505	UNIVERSITY OF ARKANSAS, DEPT. OF GEOLOGY, FAYETTEVILLE	
00027	80513	DISTRICT WATER-QUALITY LAB, LITTLE ROCK, ARKANSAS	
00027	80515	ARKANSAS GEOLOGICAL COMMISSION	
00027	80601	HEALTH AND HUMAN SERVICES INDIAN HEALTH SERVICES, CA	
00027	80613	DISTRICT WATER-QUALITY LAB, SACRAMENTO, CALIFORNIA	
00027	80623	CITY OF SAN DIEGO LAB, CALIFORNIA	
00027	80641	LAWRENCE LIVERMORE LAB, CALIFORNIA	
00027	80650	UNIVERSITY OF CALIFORNIA, BERKELEY	

Parm Code	Fixed Values	Parameter Name
00027	80670	UNIVERSITY OF CALIFORNIA, DAVIS
00027	80671	UNIVERSITY OF CALIFORNIA, SAN DIEGO, LA JOLLA
00027	80672	UNIVERSITY OF CALIFORNIA, LOS ANGELES
00027	80801	CITY OF ARVADA, CO
00027	80839	ENV. HEALTH DIV. VET. SCIENCE COLLEGE, CSU, FORT COLLINS, CO
00027	80841	DAVIS LABORATORIES, COLORADO
00027	80843	DENVER REGIONAL COUNCIL OF GOVERNMENT
00027	80845	METROPOLITAN DENVER SEWAGE DISPOSAL DISTRICT LAB. NO. 1
00027	80849	Rocky Mountain Analytical Laboratory (Arvada, Colorado)
00027	80851	Upper Clear Creek Advisory Group, Idaho Springs, CO
00027	81113	DISTRICT WATER-QUALITY LAB, WASHINGTON, D.C.
00027	81210	ST. JOHNS WATER MANAGEMENT DISTRICT, FLORIDA
00027	81213	DISTRICT WATER-QUALITY LAB, OCALA, FLORIDA
00027	81223	INSTITUTE OF MARINE SCIENCE, MIAMI, FLORIDA
00027	81227	VOLUSIA COUNTY ENVIRONMENTAL CONTROL, FL
00027	81230	Suwannee River Water Management District, Live Oak, FL
00027	81341	GEORGIA STATE NATURAL RESOURCES DEPARTMENT
00027	81513	DISTRICT WATER-QUALITY LAB, HONOLULU, HAWAII
00027	81601	RADIOLOGICAL & ENV. SCIENCES LAB, DOE, INEL, IDAHO FALLS, ID
00027	81603	ENVIRONMENTAL CHEMISTRY LAB, E.G.&G., INEL, IDAHO FALLS, ID
00027	81605	RADIATION MEASUREMENTS LAB, E.G.&G., INEL, IDAHO FALLS, ID
00027	81607	ENVIRONMENTAL ANALYSIS GROUP, WINCO, INEL, IDAHO FALLS, ID
00027	81641	IDAHO DEPT. OF HEALTH AND WELFARE, BUREAU OF LABORATORIES
00027	81700	USGS - ILLINOIS DISTRICT
00027	81741	BLOOMINGTON NORMAL SANITARY DISTRICT, ILLINOIS
00027	81777	UNIVERSITY OF CHICAGO, ILLINOIS
00027	81941	IOWA STATE HYGIENIC LABORATORY
00027	81951	IOWA DEPARTMENT OF ENVIRONMENTAL QUALITY
00027	82041	KANSAS STATE DEPARTMENT OF HEALTH AND ENVIRONMENT
00027	82101	KENTUCKY CABINET FOR HUMAN RESOURCES
00027	82103	BECKMAR ENVIRONMENTAL LABORATORY, KENTUCKY
00027	82213	DISTRICT WATER-QUALITY LAB, BATON ROUGE, LOUISIANA
00027	82241	LOUISIANA, GULF SOUTH RESEARCH INSTITUTE
00027	82301	UNIVERSITY OF MAINE LABORATORY, ORONO, ME
00027	82341	MAINE, DEPT. OF ENVIRONMENTAL PROTECTION
00027	82641	WASHTENAW COUNTY HEALTH DEPARTMENT, MICHIGAN
00027	82901	UNIV. OF MISSOURI ENVIRONMENTAL TRACE SUBSTANCES LAB
00027	83011	MT Department of Environmental Quality
00027	83101	HARRIS LABORATORIES, LINCOLN, NEBRASKA
00027	83113	DISTRICT WATER-QUALITY LAB, LINCOLN, NEBRASKA
00027	83241	SIERRA ENVIRONMENTAL MONITORING SERVICE, NEVADA
00027	83341	WATER SUPPLY & POLLUTION CONTROL COMM. LAB., N.H.
00027	83401	TELEDYNE ISOTOPES, INC. NEW JERSEY
00027	83441	NEW JERSEY DEPT. OF HEALTH LABORATORY
00027	83513	DISTRICT WATER-QUALITY LAB, ALBUQUERQUE, NEW MEXICO
00027	83523	NEW MEXICO INSTITUTE OF MINING AND TECHNOLOGY - SOCORRO
00027	83541	UNIVERSITY OF NEW MEXICO
00027	83542	USBIA SOIL, WATER, & MATERIAL TESTING LAB., NEW MEXICO
00027	83611	MONROE COUNTY HEALTH DEPARTMENT, NEW YORK
00027	83613	DISTRICT WATER-QUALITY LAB, ALBANY, NEW YORK
00027	83620	UPSTATE FRESHWATER INSTITUTE, NEW YORK

Parm	Fixed		Parameter Name
Code	Values		
00027	83621	O'BRIEN AND GERE, NEW YORK	
00027	83630	SYRACUSE UNIVERSITY, DEPT. OF CIVIL ENGINEERING	
00027	83631	METROPOLITAN LABORATORY, NEW YORK	
00027	83650	ERIE COUNTY LABORATORY, NEW YORK	
00027	83660	STATE UNIVERSITY OF NEW YORK AT CORTLAND, NEW YORK	
00027	83671	COLUMBIA UNIVERSITY, NEW YORK	
00027	83713	DISTRICT WATER-QUALITY LAB, RALEIGH, NORTH CAROLINA	
00027	83741	NORTH CAROLINA DEPT. OF NATURAL AND ECONOMIC RESOURCES	
00027	83751	MECKLENBURG CO. DEPT. OF ENVIRONMENTAL HEALTH LAB, N.C.	
00027	83841	NORTH DAKOTA STATE LABORATORY	
00027	83901	NATIONAL TESTING LABORATORY, WATER CHECK DIVISION, OHIO	
00027	83913	DISTRICT WATER-QUALITY LAB, COLUMBUS, OHIO	
00027	84001	OKLAHOMA WATER RESOURCES BOARD	
00027	84003	OKLAHOMA STATE UNIVERSITY	
00027	84005	OKLAHOMA STATE HEALTH DEPARTMENT RADIOCHEMISTRY LABORATORY	
00027	84007	OKLAHOMA STATE DEPARTMENT OF AGRICULTURE	
00027	84009	ASSOCIATION OF CENTRAL OKLAHOMA GOVERNMENTS	
00027	84011	OKLAHOMA CORPORATION COMMISSION	
00027	84013	DISTRICT WATER-QUALITY LAB, OKLAHOMA CITY, OKLAHOMA	
00027	84015	OKLAHOMA CONSERVATION COMMISSION, OKLAHOMA CITY, OK	
00027	84041	OKLAHOMA GEOLOGICAL SURVEY	
00027	84042	OKLAHOMA STATE HEALTH DEPARTMENT	
00027	84113	DISTRICT WATER-QUALITY LAB, PORTLAND, OREGON	
00027	84213	DISTRICT WATER-QUALITY LAB, HARRISBURG, PENNSYLVANIA	
00027	84215	CHESTER COUNTY HEALTH DEPARTMENT LAB, PA.	
00027	84240	CITY OF PHILADELPHIA, PA AND USGS	
00027	84540	SOUTH CAROLINA WATER RESOURCES COMMISSION	
00027	84541	SAVANNAH RIVER LAB, SOUTH CAROLINA	
00027	84610	URE PROJECT LABORATORY, OAK RIDGE, TN	
00027	84699	Public Entity	
00027	84813	DISTRICT WATER-QUALITY LAB, AUSTIN, TEXAS	
00027	84823	INTERNATIONAL BOUNDARY WATER COMMISSION	
00027	84833	GUADALUPE-BLANCO RIVER AUTHORITY	
00027	84913	DISTRICT WATER-QUALITY LAB, SALT LAKE CITY, UTAH	
00027	85113	HEADQUARTERS TRITIUM LAB, RESTON, VIRGINIA	
00027	85114	DISTRICT WATER-QUALITY LAB, CHARLOTTESVILLE, VIRGINIA	
00027	85115	UNIV. OF VIRGINIA DEPT. OF ENVIRONMENTAL SCIENCES LAB	
00027	85116	VIRGINIA DIVISION OF CONSOLIDATED LABORATORY SERVICES	
00027	85117	James City Service Authority, James City County, VA	
00027	85313	DISTRICT WATER-QUALITY LAB, TACOMA, WASHINGTON	
00027	85341	AM TEST INC., WASHINGTON	
00027	85342	MUNICIPALITY OF METROPOLITAN SEATTLE, WASHINGTON	
00027	85343	WASHINGTON STATE DEPT. OF ECOLOGY	
00027	85344	WASHINGTON STATE DEPT. OF SOCIAL AND HEALTH SERVICES	
00027	85345	Analytical Resources Incorporated (Seattle, Washington)	
00027	85346	Ecology and Environment Inc (Seattle, Washington)	
00027	85348	Edge Analytical (MTC), Inc. Burlington, WA	
00027	85349	Sound Analytical Services, Inc. Fife, WA	
00027	85350	Inland Environmental Laboratory, Inc. Spokane, WA	
00027	85411	DISTRICT WATER-QUALITY LAB, CHARLESTON, WV	
00027	85540	ROBERT E. LEE AND ASSOC. GREEN BAY, WISC.	

Parm	Fixed		Parameter Name
Code	Values		
00027	85541	MAYO CLINIC, UNIVERSITY OF WISCONSIN	
00027	85542	UNIVERSITY OF WISCONSIN EXTENSION	
00027	85543	STATE LABORATORY OF HYGIENE, WISCONSIN	
00027	85544	Hazelton Laboratories America (Madison, Wisconsin)	
00027	85545	WISCONSIN DEPARTMENT OF NATURAL RESOURCES	
00027	85546	LAC DU FLAMBEAU BAND OF LAKE SUPERIOR CHIPPEWA INDIANS	
00027	85547	MILWAUKEE METROPOLITAN SEWERAGE DISTRICT, MILWAUKEE, WI	
00027	85613	DISTRICT WATER-QUALITY LAB, CHEYENNE, WYOMING	
00027	85641	WYOMING DEPARTMENT OF AGRICULTURE	
00027	87213	DISTRICT WATER-QUALITY LAB, SAN JUAN, PUERTO RICO	
00027	89201	ENVIRONMENT CANADA, WATER QUALITY BR., BURLINGTON, ONTARIO	
00027	89213	CHALK RIVER NUCLEAR LABORATORIES, CHALK RIVER, CANADA	
00027	89301	MANITOBA ENVIRONMENT, WATER STANDARDS SEC., WINNIPEG, MAN.	
00027	89401	SASKATCHEWAN ENVIRONMENT, WATER QUALITY BR., REGINA, SASK.	
00027	99001	PRIVATE CONTRACTOR	
00027	99999	OTHER	
00028	ANALYZING AGENCY		
00028	300	NAPD/NTN - NAT.ATMOS.DEPOSITION PROGRAM/NAT.TRENDS NETWORK	
00028	500	DEPARTMENT OF AGRICULTURE	
00028	504	AGRICULTURAL RESEARCH SERVICE	
00028	520	SOIL CONSERVATION SERVICE	
00028	596	FOREST SERVICE	
00028	600	DEPARTMENT OF COMMERCE	
00028	642	NATIONAL INDUSTRIAL POLLUTION CONTROL COUNCIL	
00028	648	NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	
00028	655	NATIONAL BUREAU OF STANDARDS	
00028	700	DEPARTMENT OF DEFENSE - MILITARY	
00028	701	AIR FORCE	
00028	702	ARMY	
00028	703	MARINES	
00028	704	NAVY	
00028	800	DEPARTMENT OF DEFENSE - CIVIL	
00028	810	CORPS OF ENGINEERS	
00028	900	DEPARTMENT OF HEALTH, EDUCATION AND WELFARE	
00028	910	FOOD AND DRUG ADMINISTRATION	
00028	915	ENVIRONMENTAL HEALTH SERVICE	
00028	920	FISH & WILDLIFE SERVICE	
00028	930	NATIONAL INSTITUTES OF HEALTH	
00028	1000	DEPARTMENT OF THE INTERIOR	
00028	1004	BUREAU OF LAND MANAGEMENT	
00028	1008	BUREAU OF INDIAN AFFAIRS	
00028	1016	BUREAU OF OUTDOOR RECREATION	
00028	1028	GEOLOGICAL SURVEY	
00028	1032	BUREAU OF MINES	
00028	1050	BUREAU OF SPORT FISHERIES AND WILDLIFE	
00028	1053	NATIONAL PARK SERVICE	
00028	1060	BUREAU OF RECLAMATION	
00028	1062	ALASKA POWER ADMINISTRATION	
00028	1064	BONNEVILLE POWER ADMINISTRATION	

Appendix B: Fixed Value Codes

<u>Parm</u>	<u>Fixed</u>		<u>Parameter Name</u>
<u>Code</u>	<u>Values</u>		
00028	1068	SOUTHEASTERN POWER ADMINISTRATION	
00028	1072	SOUTHWESTERN POWER ADMINISTRATION	
00028	1076	OFFICE OF SALINE WATER	
00028	1086	OFFICE OF WATER RESOURCES RESEARCH	
00028	1800	ATOMIC ENERGY COMMISSION	
00028	2000	ENVIRONMENTAL PROTECTION AGENCY	
00028	2100	DEPARTMENT OF TRANSPORTATION	
00028	2300	GENERAL SERVICES ADMINISTRATION	
00028	2500	DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT	
00028	2555	U.S. Public Health Service, Division of Indian Health	
00028	2700	NATIONAL AERONAUTICS AND SPACE ADMINISTRATION	
00028	3315	TENNESSEE VALLEY AUTHORITY	
00028	3335	WATER RESOURCES COUNCIL	
00028	6001	ASSOCIATION OF BAY AREA GOVERNMENTS, CALIFORNIA	
00028	6003	ALAMEDA CO. FLOOD CONTROL AND WATER CONSERVATION DIST., CA	
00028	6005	EAST BAY REGIONAL PARK DISTRICT, CA	
00028	6006	EAST BAY MUNICIPAL UTILITY DISTRICT, OAKLAND CA	
00028	6010	CA REGIONAL WATER QUALITY CONTROL BOARD NORTH COAST REGION	
00028	6015	UNITED WATER CONSERVATION DISTRICT, SANTA PAULA CA	
00028	6020	SANTA CLARA VALLEY WATER DISTRICT, CALIFORNIA	
00028	6040	Quanterra Environmental Services, West Sacramento, CA	
00028	8001	Chadwick and Associates, Inc., Littleton, CO	
00028	9700	STATE HEALTH LABORATORY (00 = STATE CODE)	
00028	9701	ALABAMA	
00028	9702	ALASKA	
00028	9704	ARIZONA	
00028	9705	ARKANSAS	
00028	9706	CALIFORNIA	
00028	9708	COLORADO	
00028	9709	CONNECTICUT	
00028	9710	DELAWARE	
00028	9711	DISTRICT OF COLUMBIA	
00028	9712	FLORIDA	
00028	9713	GEORGIA	
00028	9715	HAWAII	
00028	9716	IDAHO	
00028	9717	ILLINOIS	
00028	9718	INDIANA	
00028	9719	IOWA	
00028	9720	KANSAS	
00028	9721	KENTUCKY	
00028	9722	LOUISIANA	
00028	9723	MAINE	
00028	9724	MARYLAND	
00028	9725	MASSACHUSETTS	
00028	9726	MICHIGAN	
00028	9727	MINNESOTA POLLUTION CONTROL COUNCIL	
00028	9728	MISSISSIPPI	
00028	9729	MISSOURI	
00028	9730	MONTANA	
00028	9731	NEBRASKA	

<u>Parm</u>	<u>Fixed</u>		<u>Parameter Name</u>
<u>Code</u>	<u>Values</u>		
00028	9732	NEVADA	
00028	9733	NEW HAMPSHIRE	
00028	9734	NEW JERSEY	
00028	9735	NEW MEXICO	
00028	9736	NEW YORK	
00028	9737	NORTH CAROLINA	
00028	9738	NORTH DAKOTA	
00028	9739	OHIO	
00028	9740	OKLAHOMA	
00028	9741	OREGON	
00028	9742	PENNSYLVANIA	
00028	9744	RHODE ISLAND	
00028	9745	SOUTH CAROLINA	
00028	9746	SOUTH DAKOTA	
00028	9747	TENNESSEE	
00028	9748	TEXAS	
00028	9749	UTAH	
00028	9750	VERMONT	
00028	9751	VIRGINIA	
00028	9753	WASHINGTON	
00028	9754	WEST VIRGINIA	
00028	9755	WISCONSIN	
00028	9756	WYOMING	
00028	9760	AMERICAN SAMOA	
00028	9761	CANAL ZONE	
00028	9762	CANTON AND ENDERBURY ISLANDS	
00028	9766	GUAM	
00028	9767	JOHNSTON ATOLL	
00028	9771	MIDWAY ISLANDS	
00028	9772	PUERTO RICO	
00028	9773	RYUKYU ISLANDS, SOUTHERN	
00028	9774	SWAN ISLANDS	
00028	9775	TRUST TERRITORIES OF THE PACIFIC ISLANDS	
00028	9776	U.S. MISCELLANEOUS CARIBBEAN ISLANDS	
00028	9777	U.S. MISCELLANEOUS PACIFIC ISLANDS	
00028	9778	VIRGIN ISLANDS	
00028	9779	WAKE ISLAND	
00028	9780	MEXICO	
00028	9781	TAMAULIPAS	
00028	9782	NUEVO LEON	
00028	9783	COAHUILA	
00028	9784	CHIHUAHUA	
00028	9785	SONORA	
00028	9786	BAJA CALIFORNIA NORTE	
00028	9790	NEW BRUNSWICK	
00028	9791	QUEBEC	
00028	9792	ONTARIO	
00028	9793	MANITOBA	
00028	9794	SASKATCHEWAN	
00028	9795	ALBERTA	
00028	9796	BRITISH COLUMBIA	

<u>Parm</u>	<u>Fixed</u>		<u>Parameter Name</u>
<u>Code</u>	<u>Values</u>		
00028	9797	YUKON	
00028	9801	PRIVATE LABORATORY	
00028	9802	SALT RIVER VALLEY USERS ASSOCIATION	
00028	9803	METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	
00028	9804	FLORIDA DEPARTMENT OF POLLUTION CONTROL	
00028	9805	CENTRAL AND SOUTHERN FLORIDA FLOOD CONTROL DISTRICT	
00028	9806	FLORIDA GAME AND FRESH WATER FISH COMMISSION	
00028	9807	FLORIDA DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES	
00028	9808	SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT	
00028	9809	CITY OF JACKSONVILLE, FLORIDA	
00028	9810	REEDY CREEK IMPROVEMENT DISTRICT, FLORIDA	
00028	9811	ORANGE COUNTY POLLUTION CONTROL DEPARTMENT, FLORIDA	
00028	9812	BREVARD COUNTY POLLUTION CONTROL DEPARTMENT, FLORIDA	
00028	9813	PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES	
00028	9814	ALASKA DEPARTMENT OF FISH AND GAME	
00028	9815	ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION	
00028	9816	CALIFORNIA DEPARTMENT OF WATER RESOURCES	
00028	9817	ORANGE COUNTY WATER DISTRICT, CALIF.	
00028	9818	HILLSBOROUGH COUNTY ENVIRONMENTAL PROTECTION COMM., FL	
00028	9819	NASSAU COUNTY DEPARTMENT OF HEALTH, NY	
00028	9820	SUFFOLK COUNTY DEPARTMENT OF HEALTH, NY	
00028	9821	SUFFOLK COUNTY DEPARTMENT OF ENVIR. CONTROL, NY	
00028	9822	SUFFOLK COUNTY WATER AUTHORITY, NY	
00028	9823	ALAMEDA COUNTY WATER DISTRICT, CA	
00028	9824	ALAMEDA CO. FLOOD CONTROL & WATER CONSER. DIST, ZONE 7, CA	
00028	9825	VALLEY COMMUNITY SERVICES DISTRICT (LIVERMORE), CA	
00028	9826	CITY OF LIVERMORE WASTE TREATMENT PLANT, CA	
00028	9827	ARKANSAS DEPARTMENT OF POLLUTION CONTROL AND ECOLOGY	
00028	9828	ARKANSAS GAME AND FISH COMMISSION	
00028	9829	NASSAU COUNTY DEPARTMENT OF PUBLIC WORKS, N.Y.	
00028	9831	UNIVERSITY OF IOWA, STATE HYGIENIC LABORATORY	
00028	9902	UNIVERSITY OF ARIZONA	
00028	9903	UNIVERSITY OF FLORIDA	
00028	9904	FLORIDA STATE UNIVERSITY	
00028	9905	FLORIDA TECHNOLOGICAL UNIVERSITY	
00028	9906	UNIVERSITY OF ALASKA	
00028	10001	University of Delaware, College of Marine Studies, Lewes,DE	
00028	12001	CITY OF TAMPA, FLORIDA	
00028	12002	CITY OF VERO BEACH, FLORIDA	
00028	12005	CITY OF TALLAHASSEE, FLORIDA	
00028	12007	ITT COMMUNITY DEVELOPMENT CORPORATION, FLORIDA	
00028	12010	PALM BEACH COUNTY ENGINEER	
00028	12020	PALM BEACH COUNTY HEALTH DEPT.	
00028	12030	DADE COUNTY DEPT. OF ENV. RESOURCES MAN.	
00028	12040	University of Miami, Tritium Laboratory, Miami, FL	
00028	12050	Quanterra Environmental Services, Tampa, FL	
00028	16001	IDAHO DEPARTMENT OF WATER RESOURCES	
00028	16002	IDAHO DEPARTMENT OF HEALTH AND WELFARE	
00028	17001	METROPOLITAN SANITARY DIST. OF GREATER CHICAGO(MSD)	
00028	17002	ILLINOIS ENVIRONMENTAL PROTECTION AGENCY (IEPA)	
00028	17003	ILLINOIS STATE WATER SURVEY (ISWS)	

Parm Code	Fixed Values	Parameter Name
00028	17004	INTERSURVEY GEOTECHNICAL LAB, IGS
00028	18001	INDIANA DEPT. ENV. MGMT., DRINKING WATER BRANCH, GW SECTION
00028	18002	INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT (IDEM)
00028	18003	INDIANA GEOLOGICAL SURVEY (IGS)
00028	18004	INDIANA DEPARTMENT OF NATURAL RESOURCES (IDNR)
00028	18005	INDIANAPOLIS DEPARTMENT OF PUBLIC WORKS, INDIANA (IDPW)
00028	18006	PURDUE UNIVERSITY, LAFAYETTE, INDIANA
00028	18007	INDIANA UNIVERSITY, BLOOMINGTON, INDIANA
00028	18008	BALL STATE UNIVERSITY, MUNCIE, INDIANA
00028	18009	ST. JOSEPH RIVER BASIN COMMISSION, INDIANA
00028	20001	KANSAS STATE GEOLOGICAL SURVEY
00028	20003	CITY OF TOPEKA, KANSAS WASTEWATER LABORATORY
00028	20005	CITY OF WICHITA, KANSAS WATER AND WASTEWATER LABORATORY
00028	21001	GEOLOGICAL SURVEY OF KENTUCKY
00028	25001	BARNSTABLE COUNTY HEALTH DEPARTMENT, MASS.
00028	25003	LEO LAB, MASS
00028	25005	Biology Department, Woods Hole Oceanographic Inst., MA
00028	26001	PhycoTech, St Joseph, MI
00028	27001	Minn. Department of Natural Resources (DNR), St. Paul, MN
00028	27002	Minn. DNR, Waters Division, St. Paul, MN
00028	27003	Minn. DNR, Fish and Wildlife Division, St. Paul, MN
00028	27004	Minn. DNR, Forestry Division, St. Paul, MN
00028	27005	Minn. DNR, Minerals Division, St. Paul, MN
00028	27010	Minn. Pollution Control Agency (PCA), St. Paul, MN
00028	27011	Minn. PCA, Water Quality Division, St. Paul, MN
00028	27012	Minn. PCA, Solid/Hazardous Waste Division, St. Paul, MN
00028	27013	Minn. PCA, Air Quality Division, St. Paul, MN
00028	27020	Minn. Department of Health, Minneapolis, MN
00028	27030	Minn. Geological Survey, St. Paul, MN
00028	27035	Univ. of Minnesota, Minneapolis-St. Paul, MN
00028	27036	Univ. of Minn., Geology and Geophysics, Minneapolis, MN
00028	27037	Univ. of Minn., Research Analytical Lab, St. Paul, MN
00028	27038	Univ. of Minn., Gray Freshwater Bio. Inst., Navarre, MN
00028	27039	Univ. of Minn., Soil Science St. Paul, MN
00028	27040	Univ. of Minn., Agricultural Engineering, St. Paul, MN
00028	27041	Univ. of Minn., Ecol., Evol., and Behavior, St. Paul, MN
00028	27050	Metropolitan Waste Control Commission, St. Paul, MN
00028	28001	OFFICE OF POLLUTION CONTROL, MISSISSIPPI
00028	28002	OFFICE OF GEOLOGY, MISSISSIPPI
00028	28003	OFFICE OF LAND AND WATER RESOURCES, MISSISSIPPI
00028	28004	MISSISSIPPI STATE CHEMICAL LABORATORY, MISS. STATE UNIV.
00028	29001	MISSOURI DEPT OF NATURAL RESOURCES, DIV OF ENVIR. QUALITY
00028	30010	MONTANA BUREAU OF MINES AND GEOLOGY
00028	30020	MONTANA DEPT. OF FISH WILDLIFE AND PARKS
00028	30030	MONTANA DEPT. OF HEALTH/ENV. SCIENCES, WATER QUALITY BUREAU
00028	30040	MONTANA AGRICULTURAL RESEARCH CENTER
00028	30050	MONTANA TUNNELS MINING, INC., WICKES, MT
00028	30060	WATER CONSULTING, INC., HAMILTON, MT
00028	31001	NEBRASKA DEPARTMENT OF ENVIRONMENTAL CONTROL LABORATORY
00028	32001	NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
00028	32003	NEVADA DIVISION OF WATER RESOURCES

Parm	Fixed		Parameter Name
Code	Values		
00028	32005	UNIV. OF NEV., DIV. OF RENEW. NAT. RESOURCES	
00028	32006	NEVADA BUREAU OF ENVIRONMENTAL HEALTH	
00028	32007	NEVADA BUREAU OF MINES & GEOLOGY	
00028	32009	NEVADA DEPARTMENT OF FISH & GAME	
00028	32010	NEVADA DIVISION OF FORESTRY	
00028	32011	NEVADA DIVISION OF PARKS	
00028	32012	NEVADA CONSUMER HEALTH PROTECTION SERVICE	
00028	32013	UNIV. OF NEV., DESERT RESEARCH INSTITUTE	
00028	32014	UNIV. OF NEV., COLLEGE OF AGRICULTURE	
00028	32015	CLARK COUNTY DISTRICT HEALTH DEPARTMENT, NEVADA	
00028	32016	WASHOE COUNTY DISTRICT HEALTH DEPARTMENT, NEVADA	
00028	32017	LAS VEGAS VALLEY WATER DISTRICT, NEVADA	
00028	32018	SIERRA PACIFIC POWER CO., NEVADA	
00028	32019	NEVADA BUREAU OF LABORATORIES AND RESEARCH	
00028	32020	WASHOE COUNTY UTILITIES, RENO, NV	
00028	32021	CARSON CITY PUBLIC WORKS, CARSON CITY, NV	
00028	32022	TRUCKEE MEADOWS WATER RECLAMATION FACILITY, RENO, NV	
00028	32091	WASHOE COUNTY COG, NEVADA	
00028	32092	CLARK COUNTY COG, NEVADA	
00028	32093	MUNICIPAL WATER COMPANY, NEVADA	
00028	34001	NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION	
00028	34002	ROY F. WESTON INC., WEST CHESTER, PA	
00028	34003	BOOTH, GARRETT, AND BLAIR INC., AMBLER, PA	
00028	34004	CAPE MAY COUNTY, NJ, DEPARTMENT OF HEALTH	
00028	34005	CAPE MAY COUNTY, NJ, PLANNING BOARD	
00028	34006	Quanterra Environmental Services, Summerset, NJ	
00028	34007	Accutest Laboratories, Dayton, NJ	
00028	34008	Analab Inc, Edison, NJ	
00028	36010	NEW YORK DEPARTMENT OF HEALTH	
00028	36012	NEW YORK DEPT. OF ENVIRONMENTAL CONSERVATION, ALBANY, NY	
00028	36020	NASSAU COUNTY, DEPARTMENT OF PUBLIC WORKS	
00028	38001	NORTH DAKOTA GEOLOGICAL SURVEY	
00028	38002	NORTH DAKOTA STATE WATER COMMISSION	
00028	38003	NORTH DAKOTA STATE HEALTH DEPARTMENT	
00028	39001	HEIDELBERG COLLEGE QW LAB, TIFFIN, OHIO	
00028	40810	CORPS OF ENGINEERS, TULSA DISTRICT	
00028	41000	CITY OF PORTLAND, BUREAU OF WATER WORKS	
00028	42010	CITY OF PHILADELPHIA, PA.	
00028	42011	SUSQUEHANNA RIVER BASIN COMMISSION	
00028	42015	The Academy of Natural Sciences of Philadelphia, PA	
00028	42020	Quanterra Environmental Services, Pittsburgh, PA	
00028	46001	SOUTH DAKOTA STATE UNIVERSITY SOILS LABORATORY	
00028	46002	SOUTH DAKOTA WATER RESOURCES INSTITUTE	
00028	46003	SOUTH DAKOTA AGRICULTURAL EXPERIMENT STATION	
00028	46004	SOUTH DAKOTA STATE CHEMIST	
00028	46005	SOUTH DAKOTA SCHOOL OF MINES AND TECHNOLOGY	
00028	46006	SOUTH DAKOTA STATE UNIVERSITY, DEPT. STATION BIOCHEMISTRY	
00028	46007	SOUTH DAKOTA DIVISION OF WATER RIGHTS	
00028	46008	SOUTH DAKOTA GEOLOGICAL SURVEY, VERMILLION, SD	
00028	46009	SOUTH DAKOTA DEPARTMENT OF HEALTH	
00028	47001	UNIVERSITY OF TENNESSEE AT KNOXVILLE	

Parm Code	Fixed Values	Parameter Name
00028 48001	Texas A&M U., Trace Element Research Lab., College Sta., TX	
00028 51001	Hampton Roads Sanitation Dist, Cent Envir Lab, Virg Bch, VA	
00028 51003	George Mason University, Fairfax, VA	
00028 55555	INDIVIDUAL	
00028 66666	DRILLER	
00028 80000	QA PROJECT	
00028 80003	INST. TECH. HERNPHYSIK, DORMSTADT, FEDERAL REPUBLIC OF GERM	
00028 80010	ATLANTA CENTRAL LABORATORY, GA	
00028 80020	DENVER CENTRAL LABORATORY, CO	
00028 80030	ALBANY CENTRAL LABORATORY, NY	
00028 80040	USGS Geologic Division, Branch of Geochemistry, Arvada, CO	
00028 80042	USGS, Biology Dept., Woods Hole Oceanographic Ins, MA	
00028 80055	IEAE, VIENNA, AUSTRIA	
00028 80088	RADIOACTIVE DATING LAB, GEOL. SURVEY, SWEDEN-FRESCATI	
00028 80113	DISTRICT WATER-QUALITY LAB, TUSCALOOSA, ALABAMA	
00028 80141	GEOLOGICAL SURVEY OF ALABAMA	
00028 80201	Alaska Division of Geologic and Geophysical Surveys (DGGS)	
00028 80203	Chemical and Geological Laboratories of Alaska	
00028 80205	Northern Test Lab (Soldotna, Alaska)	
00028 80213	DISTRICT WATER-QUALITY LAB, ANCHORAGE, ALASKA	
00028 80410	CITY OF TUCSON, AZ	
00028 80413	DISTRICT WATER-QUALITY LAB, YUMA, ARIZONA	
00028 80415	ARIZ. DEPT. OF ENVIRONMENTAL QUALITY	
00028 80417	ARIZ. DEPT. OF WATER RESOURCES	
00028 80501	OUACHITA BAPTIST UNIVERSITY, ARKADELPHIA, ARKANSAS	
00028 80503	UNIVERSITY OF ARKANSAS, DEPT. OF ENGINEERING, FAYETTEVILLE	
00028 80505	UNIVERSITY OF ARKANSAS, DEPT. OF GEOLOGY, FAYETTEVILLE	
00028 80513	DISTRICT WATER-QUALITY LAB, LITTLE ROCK, ARKANSAS	
00028 80515	ARKANSAS GEOLOGICAL COMMISSION	
00028 80601	HEALTH AND HUMAN SERVICES INDIAN HEALTH SERVICES, CA	
00028 80613	DISTRICT WATER-QUALITY LAB, SACRAMENTO, CALIFORNIA	
00028 80623	CITY OF SAN DIEGO LAB, CALIFORNIA	
00028 80641	LAWRENCE LIVERMORE LAB, CALIFORNIA	
00028 80642	GLOBAL GEOCHEMISTRY CORPORATION, CANOGA PARK, CA	
00028 80650	UNIVERSITY OF CALIFORNIA, BERKELEY	
00028 80670	UNIVERSITY OF CALIFORNIA, DAVIS	
00028 80671	UNIVERSITY OF CALIFORNIA, SAN DIEGO, LA JOLLA	
00028 80672	UNIVERSITY OF CALIFORNIA, LOS ANGELES	
00028 80801	CITY OF ARVADA, CO	
00028 80839	ENV. HEALTH DIV. VET. SCIENCE COLLEGE, CSU, FORT COLLINS, CO	
00028 80841	DAVIS LABORATORIES, COLORADO	
00028 80843	DENVER REGIONAL COUNCIL OF GOVERNMENT	
00028 80845	METROPOLITAN DENVER SEWAGE DISPOSAL DISTRICT LAB. NO. 1	
00028 80847	SOILS TESTING LABORATORY, COLO STATE UNIV, FT. COLLINS, CO	
00028 80849	Rocky Mountain Analytical Laboratory (Arvada, Colorado)	
00028 80851	Upper Clear Creek Advisory Group, Idaho Springs, CO	
00028 80853	City of Colorado Springs, Environmental Quality Lab	
00028 81113	DISTRICT WATER-QUALITY LAB, WASHINGTON, D.C.	
00028 81210	ST. JOHNS WATER MANAGEMENT DISTRICT, FLORIDA	
00028 81213	DISTRICT WATER-QUALITY LAB, OCALA, FLORIDA	
00028 81223	INSTITUTE OF MARINE SCIENCE, MIAMI, FLORIDA	

<u>Param Code</u>	<u>Fixed Values</u>	<u>Parameter Name</u>
00028	81227	VOLUSIA COUNTY ENVIRONMENTAL CONTROL, FL
00028	81229	UNIVERSITY OF MIAMI, MIAMI, FL
00028	81341	GEORGIA STATE NATURAL RESOURCES DEPARTMENT
00028	81513	DISTRICT WATER-QUALITY LAB, HONOLULU, HAWAII
00028	81601	RADIOLOGICAL & ENV. SCIENCES LAB, DOE, INEL, IDAHO FALLS, ID
00028	81603	ENVIRONMENTAL CHEMISTRY LAB, E.G.&G., INEL, IDAHO FALLS, ID
00028	81605	RADIATION MEASUREMENTS LAB, E.G.&G., INEL, IDAHO FALLS, ID
00028	81607	ENVIRONMENTAL ANALYSIS GROUP, WINCO, INEL, IDAHO FALLS, ID
00028	81641	IDAHO DEPT. OF HEALTH AND WELFARE, BUREAU OF LABORATORIES
00028	81700	USGS - ILLINOIS DISTRICT
00028	81741	BLOOMINGTON NORMAL SANITARY DISTRICT, ILLINOIS
00028	81777	UNIVERSITY OF CHICAGO, ILLINOIS
00028	81941	IOWA STATE HYGIENIC LABORATORY
00028	81951	IOWA DEPARTMENT OF ENVIRONMENTAL QUALITY
00028	82013	DISTRICT RESEARCH WATER-QUALITY LAB, LAWRENCE, KS
00028	82041	KANSAS STATE DEPARTMENT OF HEALTH AND ENVIRONMENT
00028	82101	KENTUCKY CABINET OF HUMAN RESOURCES
00028	82103	BECKMAR ENVIRONMENTAL LABORATORY, KENTUCKY
00028	82213	DISTRICT WATER-QUALITY LAB, BATON ROUGE, LOUISIANA
00028	82241	LOUISIANA, GULF SOUTH RESEARCH INSTITUTE
00028	82301	UNIVERSITY OF MAINE LABORATORY, ORONO, ME
00028	82341	MAINE, DEPT. OF ENVIRONMENTAL PROTECTION
00028	82641	WASHTENAW COUNTY HEALTH DEPARTMENT, MICHIGAN
00028	82901	UNIV. OF MISSOURI ENVIRONMENTAL TRACE SUBSTANCES LAB
00028	82913	DISTRICT WATER-QUALITY LAB, ROLLA, MISSOURI
00028	83011	MT Department of Environmental Quality
00028	83101	HARRIS LABORATORIES, LINCOLN, NEBRASKA
00028	83105	OLSEN'S AGRICULTURAL LABORATORY, INC., MCCOOK, NE
00028	83107	University of Nebraska, Limnology Laboratory, Lincoln, NB
00028	83113	DISTRICT WATER-QUALITY LAB, LINCOLN, NEBRASKA
00028	83241	SIERRA ENVIRONMENTAL MONITORING SERVICE, NEVADA
00028	83341	WATER SUPPLY & POLLUTION CONTROL COMM. LAB., N.H.
00028	83401	TELEDYNE ISOTOPES, INC. NEW JERSEY
00028	83441	NEW JERSEY DEPT. OF HEALTH LABORATORY
00028	83513	DISTRICT WATER-QUALITY LAB, ALBUQUERQUE, NEW MEXICO
00028	83523	NEW MEXICO INSTITUTE OF MINING AND TECHNOLOGY - SOCORRO
00028	83541	UNIVERSITY OF NEW MEXICO
00028	83542	USBIA SOIL, WATER, & MATERIAL TESTING LAB., NEW MEXICO
00028	83611	MONROE COUNTY HEALTH DEPARTMENT, NEW YORK
00028	83613	DISTRICT WATER-QUALITY LAB, ALBANY, NEW YORK
00028	83620	UPSTATE FRESHWATER INSTITUTE, NEW YORK
00028	83621	O'BRIEN AND GERE, NEW YORK
00028	83630	SYRACUSE UNIVERSITY, DEPT. OF CIVIL ENGINEERING
00028	83631	METROPOLITAN LABORATORY, NEW YORK
00028	83650	ERIE COUNTY LABORATORY, NEW YORK
00028	83660	STATE UNIVERSITY OF NEW YORK AT CORTLAND, NEW YORK
00028	83671	COLUMBIA UNIVERSITY, NEW YORK
00028	83713	DISTRICT WATER-QUALITY LAB, RALEIGH, NORTH CAROLINA
00028	83741	NORTH CAROLINA DEPT. OF NATURAL AND ECONOMIC RESOURCES
00028	83751	MECKLENBURG CO. DEPT. OF ENVIRONMENTAL HEALTH LAB, N.C.
00028	83841	NORTH DAKOTA STATE LABORATORY

Parm Code	Fixed Values	Parameter Name
00028	83901	NATIONAL TESTING LABORATORY, WATER CHECK DIVISION, OHIO
00028	83905	OHIO ENVIRONMENTAL PROTECTION AGENCY, COLUMBUS, OHIO
00028	83913	DISTRICT WATER-QUALITY LAB, COLUMBUS, OHIO
00028	83915	CITY OF COLUMBUS, WATER QUALITY ASSURANCE LABORATORY, OHIO
00028	84001	OKLAHOMA WATER RESOURCES BOARD
00028	84003	OKLAHOMA STATE UNIVERSITY
00028	84005	OKLAHOMA STATE HEALTH DEPARTMENT RADIOCHEMISTRY LABORATORY
00028	84007	OKLAHOMA STATE DEPARTMENT OF AGRICULTURE
00028	84009	ASSOCIATION OF CENTRAL OKLAHOMA GOVERNMENTS
00028	84011	OKLAHOMA CORPORATION COMMISSION
00028	84013	DISTRICT WATER-QUALITY LAB, OKLAHOMA CITY, OKLAHOMA
00028	84015	OKLAHOMA CONSERVATION COMMISSION, OKLAHOMA CITY, OK
00028	84041	OKLAHOMA GEOLOGICAL SURVEY
00028	84042	OKLAHOMA STATE HEALTH DEPARTMENT
00028	84113	DISTRICT WATER-QUALITY LAB, PORTLAND, OREGON
00028	84213	DISTRICT WATER-QUALITY LAB, HARRISBURG, PENNSYLVANIA
00028	84215	CHESTER COUNTY HEALTH DEPARTMENT LAB, PA.
00028	84240	CITY OF PHILADELPHIA, PA AND USGS
00028	84540	SOUTH CAROLINA WATER RESOURCES COMMISSION
00028	84541	SAVANNAH RIVER LAB, SOUTH CAROLINA
00028	84610	URE PROJECT LABORATORY, OAK RIDGE, TN
00028	84699	Public Entity
00028	84813	DISTRICT WATER-QUALITY LAB, AUSTIN, TEXAS
00028	84823	INTERNATIONAL BOUNDARY WATER COMMISION
00028	84833	GUADALUPE-BLANCO RIVER AUTHORITY
00028	84913	DISTRICT WATER-QUALITY LAB, SALT LAKE CITY, UTAH
00028	85113	HEADQUARTERS TRITIUM LAB, RESTON, VIRGINIA
00028	85114	DISTRICT WATER-QUALITY LAB, CHARLOTTESVILLE, VIRGINIA
00028	85115	UNIV. OF VIRGINIA DEPT. OF ENVIRONMENTAL SCIENCES LAB
00028	85116	VIRGINIA DIVISION OF CONSOLIDATED LABORATORY SERVICES
00028	85313	DISTRICT WATER-QUALITY LAB, TACOMA, WASHINGTON
00028	85341	AM TEST INC., WASHINGTON
00028	85342	MUNICIPALITY OF METROPOLITAN SEATTLE, WASHINGTON
00028	85343	WASHINGTON STATE DEPT. OF ECOLOGY
00028	85344	WASHINGTON STATE DEPT. OF SOCIAL AND HEALTH SERVICES
00028	85345	Analytical Resources Incorporated (Seattle, Washington)
00028	85346	Ecology and Environment Inc (Seattle, Washington)
00028	85347	INTERNATIONAL TECHNOLOGY CORPORATION, RICHLAND, WA
00028	85348	Edge Analytical (MTC), Inc. Burlington, WA
00028	85349	Sound Analytical Services, Inc. Fife, WA
00028	85350	Inland Environmental Laboratory, Inc. Spokane, WA
00028	85351	FRONTIER GEOSCIENCES, SEATTLE, WA
00028	85411	DISTRICT WATER-QUALITY LAB, CHARLESTON, WV
00028	85540	ROBERT E. LEE AND ASSOC. GREEN BAY, WISC.
00028	85541	MAYO CLINIC, UNIVERSITY OF WISCONSIN
00028	85542	UNIVERSITY OF WISCONSIN EXTENSION
00028	85543	STATE LABORATORY OF HYGIENE, WISCONSIN
00028	85544	Hazelton Laboratories America (Madison, Wisconsin)
00028	85547	MILWAUKEE METROPOLITAN SEWERAGE DISTRICT, MILWAUKEE, WI
00028	85613	DISTRICT WATER-QUALITY LAB, CHEYENNE, WYOMING
00028	85614	LOUISVILLE & JEFFERSON COUNTY METRO SEWER DISTRICT LAB

<u>Parm</u>	<u>Fixed</u>		<u>Parameter Name</u>
<u>Code</u>	<u>Values</u>		
00028	85641	WYOMING DEPARTMENT OF AGRICULTURE	
00028	87213	DISTRICT WATER-QUALITY LAB, SAN JUAN, PUERTO RICO	
00028	89201	ENVIRONMENT CANADA, QATER QUALITY BR., BURLINGTON, ONTARIO	
00028	89213	CHALK RIVER NUCLEAR LABORATORIES, CHALK RIVER, CANADA	
00028	89301	MANITOBA ENVIRONMENT, WATER STANDARDS SEC., WINNIPEG, MAN.	
00028	89401	SASKATCHEWAN ENVIRONMENT, WATER QUALITY BR., REGINA, SASK.	
00028	92001	Univ. of Waterloo, Isotope Lab, Waterloo, Ontario, Canada	
00028	99001	PRIVATE CONTRACTOR	
00028	99999	OTHER	
00041	WEATHER		
00041	0	CLOUDLESS	
00041	1	PARTLY CLOUDY	
00041	2	CLOUDY	
00041	3	OVERCAST	
00041	10	PRECIPITATION WITHIN SIGHT	
00041	13	UGLY, THREATENING SKY	
00041	40	FOG	
00041	50	DRIZZLE	
00041	51	SLIGHT DRIZZLE, INTERMITTENT	
00041	52	SLIGHT DRIZZLE, CONTINUOUS	
00041	53	MODERATE DRIZZLE, INTERMITTENT	
00041	54	MODERATE DRIZZLE, CONTINUOUS	
00041	55	THICK DRIZZLE, INTERMITTENT	
00041	56	THICK DRIZZLE, CONTINUOUS	
00041	57	DRIZZLE AND FOG	
00041	58	SLIGHT OR MODERATE DRIZZLE AND RAIN	
00041	59	THICK DRIZZLE AND RAIN	
00041	60	RAIN	
00041	61	SLIGHT RAIN, INTERMITTENT	
00041	62	SLIGHT RAIN, CONTINUOUS	
00041	63	MODERATE RAIN, INTERMITTENT	
00041	64	MODERATE RAIN, CONTINUOUS	
00041	65	HEAVY RAIN, INTERMITTENT	
00041	66	HEAVY RAIN, CONTINUOUS	
00041	67	RAIN AND FOG	
00041	68	SLIGHT OR MODERATE MIXED RAIN AND SNOW	
00041	69	HEAVY MIXED RAIN AND SNOW	
00041	70	SNOW OR SLEET	
00041	71	SLIGHT SNOW IN FLAKES, INTERMITTENT	
00041	72	SLIGHT SNOW IN FLAKES, CONTINUOUS	
00041	73	MODERATE SNOW IN FLAKES, INTERMITTENT	
00041	74	MODERATE SNOW IN FLAKES, CONTINUOUS	
00041	75	HEAVY SNOW IN FLAKES, INTERMITTENT	
00041	76	HEAVY SNOW IN FLAKES, CONTINUOUS	
00041	77	SNOW AND FOG	
00041	78	GRANULAR SNOW (FROZEN DRIZZLE)	
00041	79	ICE CRYSTALS	
00041	80	SHOWER(S)	
00041	81	SLIGHT OR MODERATE RAIN SHOWER(S)	

<u>Parm Code</u>	<u>Fixed Values</u>	<u>Parameter Name</u>
00041	82	HEAVY RAIN SHOWER(S)
00041	83	SLIGHT OR MODERATE SNOW SHOWER(S)
00041	84	HEAVY SNOW SHOWER(S)
00041	85	SLIGHT OR MODERATE RAIN AND SNOW SHOWER(S)
00041	86	HEAVY RAIN AND SNOW SHOWER(S)
00041	87	GRANULAR SNOW SHOWER(S)
00041	88	SLIGHT OR MODERATE HAIL OR RAIN AND HAIL SHOWER(S)
00041	89	HEAVY HAIL OR RAIN AND HAIL SHOWER(S)
00041	90	THUNDERSTORM
00041	93	SLIGHT THUNDERSTORM WITH RAIN OR SNOW
00041	94	SLIGHT THUNDERSTORM WITH HAIL
00041	95	MODERATE THUNDERSTORM WITH RAIN OR SNOW
00041	96	MODERATE THUNDERSTORM WITH HAIL
00041	97	HEAVY THUNDERSTORM WITH RAIN OR SNOW
00041	99	HEAVY THUNDERSTORM WITH HAIL
00115	SAMPLE TREATMENT	
00115	1	RAW
00115	2	TREATED
01300	OIL-GREASE (SEVERITY)	
01300	0	NONE
01300	1	MILD
01300	2	MODERATE
01300	3	SERIOUS
01300	4	EXTREME
01305	DETERGENT SUDS (SEVERITY)	
01305	0	NONE
01305	1	MILD
01305	2	MODERATE
01305	3	SERIOUS
01305	4	EXTREME
01310	GAS BUBBLES (SEVERITY)	
01310	0	NONE
01310	1	MILD
01310	2	MODERATE
01310	3	SERIOUS
01310	4	EXTREME
01315	SLUDGS: FLOATING (SEVERITY)	
01315	0	NONE
01315	1	MILD
01315	2	MODERATE
01315	3	SERIOUS

Appendix B: Fixed Value Codes

<u>Parm Code</u>	<u>Fixed Values</u>	<u>Parameter Name</u>
01315	4	EXTREME
01320	GARBAGE, FLOATING (SEVERITY)	
01320	0	NONE
01320	1	MILD
01320	2	MODERATE
01320	3	SERIOUS
01320	4	EXTREME
01325	ALGAE, FLOATING MATS (SEVERITY)	
01325	0	NONE
01325	1	MILD
01325	2	MODERATE
01325	3	SERIOUS
01325	4	EXTREME
01330	ODOR, ATMOSPHERIC (SEVERITY)	
01330	0	NONE
01330	1	MILD
01330	2	MODERATE
01330	3	SERIOUS
01330	4	EXTREME
01335	SEWAGE SOLIDS, FRESH, FLOATING (SEVERITY)	
01335	0	NONE
01335	1	MILD
01335	2	MODERATE
01335	3	SERIOUS
01335	4	EXTREME
01340	FISH, DEAD (SEVERITY)	
01340	0	NONE
01340	1	MILD
01340	2	MODERATE
01340	3	SERIOUS
01340	4	EXTREME
01345	DEBRIS, FLOATING (SEVERITY)	
01345	0	NONE
01345	1	MILD
01345	2	MODERATE
01345	3	SERIOUS
01345	4	EXTREME
01350	TURBIDITY (SEVERITY)	

<u>Parm Code</u>	<u>Fixed Values</u>	<u>Parameter Name</u>
01350 STREAMFLOW (SEVERITY)		
01351	0	NONE
01351	1	MILD
01351	2	MODERATE
01351	3	SERIOUS
01351	4	EXTREME
01351 STREAMFLOW (SEVERITY)		
01351	1	DRY
01351	2	LOW
01351	3	NORMAL
01351	4	FLOOD
01351	5	ABOVE NORMAL
01355 ICE COVER, FLOATING OR SOLID (SEVERITY)		
01355	0	NONE
01355	1	MILD
01355	2	MODERATE
01355	3	SERIOUS
01355	4	EXTREME
04117 TETHER LINE USED FOR COLLECTING SAMPLE (YES=1) CODE		
04117	1	YES
31678 STREPTOCOCCI, FECAL, TUBE CONFIGURATION		
31678	1	FIVE 10-ML TUBES
31678	2	FIVE 10-ML, FIVE 1-ML AND FIVE 0.1-ML TUBES
31678	3	FIVE 10-ML, ONE 1-ML AND ONE 0.1-ML TUBES
31678	4	ONE 50-ML AND FIVE 10-ML TUBES
31678	5	ONE 50-ML, FIVE 10-ML AND FIVE 1-ML TUBES
31678	6	FIVE 50-ML, FIVE 10-ML AND FIVE 1-ML TUBES
31678	7	THREE 10-ML, THREE 1-ML AND THREE 0.1-ML TUBES
31678	8	FIVE 100-ML, FIVE 10-ML AND FIVE 1-ML TUBES
49986 DEGREE OF DECOMPOSITION, SOIL, CODE		
49986	1	FIBRIX
49986	2	HEMIC
49986	3	SAPRIC
50276 FILTER TYPE, CODE		
50276	10	GELMAN CAPSULE, 0.45UM
50276	20	MEMBRANE, 0.45UM, 142MM
50276	30	MEMBRANE, 0.45UM, 47MM
50276	40	MEMBRANE, 0.22UM, 47MM
50276	50	MEMBRANE, 0.1UM, 47MM

<u>Parm Code</u>	<u>Fixed Values</u>	<u>Parameter Name</u>
50276	60	MEMBRANE, 0.1UM, 142MM
50276	70	MEMBRANE, SYRINGE-TYPE, 0.45UM
50276	80	MEMBRANE, SYRINGE-TYPE, 0.22UM
50276	90	SILVER MEMBRANE, 0.45UM, 47MM
50276	100	GLASS FIBER, 0.7UM, 142MM
50276	110	GLASS FIBER, BAKED, 0.7UM, 142MM
50276	120	GLASS FIBER, 0.7UM, 47MM
50276	130	GLASS FIBER, BAKED, 0.7UM, 47MM
50276	200	OTHER
50280	WATER SAMPLES	
50280	1001	Fixed frequency, surface-water
50280	1002	Storm hydrograph, surface-water
50280	1003	Extreme high flow, surface-water
50280	1004	Extreme low flow, surface-water
50280	1005	Diurnal, surface-water
50280	1006	Synoptic, surface-water
50280	1099	Other, surface-water
50280	2001	Primary, ground-water
50280	2002	Supplemental, ground-water
50280	2003	Temporal characterization, ground-water
50280	2004	Resample, ground-water
50280	2099	Other, ground-water
50280	3001	NAWQA Occurrence Survey
50280	3002	NAWQA Spatial Distribution Survey
50280	3003	NAWQA Synoptic Study
50280	3099	Other, bed sediment and tissue
71995	WATER USE, PRIMARY (CODES)	
71995	111	CASH GRAINS
71995	131	FIELD CROPS - EXCEPT CASH GRAINS
71995	161	VEGETABLES AND MELONS
71995	171	FRUITS AND TREE NUTS
71995	181	HORTICULTURAL SPECIALTIES
71995	191	GENERAL FARM CROPS
71995	211	LIVESTOCK
71995	251	POULTRY AND EGGS
71995	271	ANIMAL SPECIALTIES
71995	291	GENERAL FARMS - PRIMARILY LIVESTOCK
71995	711	AGRICULTURAL SERVICES - SOIL PREP, CROP PLANTINGS, ETC.
71995	741	VETERINARY SERVICES
71995	761	ANIMAL SERVICES, FARM LABOR AND MANAGEMENT
71995	811	FORESTRY
71995	912	FISH AND WILDLIFE FARMING
71995	1011	METAL MINING
71995	1111	ANTHRACITE MINING
71995	1211	BITUMINOUS COAL AND LIGNITE MINING
71995	1311	OIL AND GAS EXTRACTION
71995	1411	MINING AND QUARRYING OF NONMETALIC MINERALS, - NONFUEL

Parm Code	Fixed Values	Parameter Name
71995	1521	BUILDING CONSTRUCTION
71995	1611	CONSTRUCTION - OTHER THAN BUILDING
71995	1711	SPECIAL TRADE (PLUMBING, HEAT, AIR, ELEC., MASONRY, ETC.)
71995	2011	MANUFACTURING - MEAT PRODUCTS
71995	2016	POULTRY AND EGG PLANTS
71995	2021	DAIRY PRODUCTS
71995	2032	CANNED & PRESERVED FRUITS AND VEGETABLES
71995	2041	GRAIN MILL PRODUCTS
71995	2051	BAKERY PRODUCTS
71995	2061	SUGAR AND CONFECTIONERY PRODUCTS
71995	2074	FATS AND OILS
71995	2084	BEVERAGES - ALCOHOLIC & SOFT DRINKS, SYRUPS & EXTRACTS
71995	2091	MISCELLANEOUS FOOD PREPARATIONS
71995	2111	TOBACCO MANUFACTURERS
71995	2211	TEXTILE MILL PRODUCTS
71995	2311	APPAREL - PRODUCTS FROM FABRICS
71995	2411	LUMBER & WOOD PRODUCTS EXCEPT FURNITURE
71995	2511	FURNITURE AND FIXTURES
71995	2611	PAPER AND ALLIED PRODUCTS
71995	2711	PRINTING, PUBLISHING, & ALLIED INDUSTRIES
71995	2821	CHEMICALS AND ALLIED PRODUCTS
71995	2911	PETROLEUM REFINING AND RELATED PRODUCTS
71995	3011	RUBBER AND MISCELLANEOUS PLASTIC PRODUCTS
71995	3111	LEATHER AND LEATHER PRODUCTS
71995	3211	STONE, CLAY, GLASS, AND CONCRETE PRODUCTS
71995	3281	CUT STONE AND STONE PRODUCTS
71995	3291	ABRASIVE, ASBESTOS, & MISCELLANEOUS NONMETALIC PRODUCTS
71995	3312	BLAST FURNACES, STEEL WORKS, & ROLLING & FINISHING MILLS
71995	3411	METAL PRODUCTS & TRANS. EQUIPMENT (NO MACHINERY)
71995	3511	MACHINERY, EXCEPT ELECTRICAL
71995	3612	ELECTRICAL & ELECTRONIC MACHINERY, EQUIPMENT & SUPPLIES
71995	3711	TRANSPORTATION EQUIPMENT REPAIRING AND PARTS
71995	3811	MEASURING, ANALYZING, & CONTROLLING INSTRUMENTS
71995	3911	MISCELLANEOUS MANUFACTURING INDUSTRIES
71995	4011	TRANSPORTATION - TRAINS, TAXICABS, AIRCRAFT
71995	4212	MOTOR FREIGHT TRANSPORTATION AND WAREHOUSING
71995	4311	U.S. POSTAL SERVICE
71995	4411	WATER TRANSPORTATION
71995	4423	WATER RECREATION ON BAYS, LAKES, RIVERS, & CANALS
71995	4511	TRANSPORTATION BY AIR
71995	4612	PIPELINES - EXCEPT NATURAL GAS
71995	4811	COMMUNICATIONS
71995	4922	GAS PRODUCTION AND DISTRIBUTION; ELEC. AND GAS SERVICE
71995	4941	WATER SUPPLY
71995	4952	SEWERAGE SYSTEMS
71995	4961	PUBLIC STEAM SUPPLY
71995	4971	IRRIGATION SYSTEMS
71995	5012	WHOLESALE TRADE - DURABLE GOODS
71995	5111	WHOLESALE TRADE - NONDURABLE GOODS
71995	5211	BUILDING MATERIALS, HARDWARE, GARDEN SUPPLY
71995	5311	GENERAL MERCHANDISE STORES

<u>Parm Code</u>	<u>Fixed Values</u>	<u>Parameter Name</u>
71995	5411	FOOD STORES
71995	5511	AUTO. DEALERS AND GASOLINE SERVICE STATIONS
71995	5611	APPAREL AND ACCESSORY STORES
71995	5712	FURNITURE, HOME FURNISHING, AND EQUIPMENT STORES
71995	5812	EATING AND DRINKING PLACES
71995	5912	MISCELLANEOUS RETAIL - DRUG, LIQUOR, BOOK, CAMERA, ETC.
71995	6011	BANKING
71995	6112	CREDIT AGENCIES
71995	6212	SECURITY AND COMMODITY BROKERS, DEALERS, AND SERVICES
71995	6311	INSURANCE
71995	6512	REAL ESTATE
71995	6711	HOLDING AND OTHER INVESTMENT OFFICES
71995	7011	HOTELS, MOTELS, TOURIST COURTS
71995	7021	ROOMING AND BOARDING HOUSES
71995	7032	CAMPS, TRANSIENT TRAILER PARKS, & CAMP SITES
71995	7041	ORGANIZATION HOTELS AND MEMBERSHIP LODGING HOUSES
71995	7211	LAUNDRY, CLEANING, AND GARMENT SERVICES
71995	7221	SHOPS - PHOTO, BEAUTY, BARBER, SHOE, FUNERAL SERVICES
71995	7311	ADVERTISING SERVICES
71995	7321	CONSUMER CREDIT AND COLLECTION
71995	7331	MAILING, REPRODUCTION, COMMERCIAL ART & PHOTOGRAPHY
71995	7341	SERVICE TO DWELLINGS AND OTHER BUILDINGS
71995	7351	NEWS SYNDICATES
71995	7361	EMPLOYMENT SERVICES
71995	7372	COMPUTER AND DATA PROCESSING
71995	7391	MISCELLANEOUS BUSINESS SERVICES
71995	7512	AUTOMOTIVE AND TRUCK RENTAL LEASING WITHOUT DRIVER
71995	7523	AUTOMOBILE PARKING
71995	7531	AUTOMOTIVE REPAIR SHOPS
71995	7542	CAR WASHES
71995	7549	AUTOMOTIVE SERVICES - EXCEPT REPAIR
71995	7622	MISCELLANEOUS REPAIR SERVICES
71995	7813	MOTION PICTURE-T.V. SERVICES, THEATERS, EXCEPT DRIVE-INS
71995	7911	RECREATION SERVICES, EXCEPT THEATERS AND PUBLIC GOLF
71995	7922	PUBLIC GOLF COURSES
71995	7993	COIN OPERATED AMUSEMENT DEVICES
71995	7996	AMUSEMENT PARKS, SPORTS AND RECREATION CLUBS, ETC.
71995	8011	HEALTH SERVICES (OFFICES)
71995	8051	NURSING AND PERSONAL CARE FACILITIES
71995	8062	HOSPITALS
71995	8071	MEDICAL AND DENTAL LABORATORIES
71995	8081	OUTPATIENT CARE FACILITIES
71995	8091	HEALTH & ALLIES SERVICES, NOT ELSEWHERE CLASSIFIED
71995	8111	LEGAL SERVICES
71995	8211	EDUCATIONAL SERVICES, LIBRARIES AND INFORMATION CENTERS
71995	8231	SOCIAL SERVICES & REHABILITATION CENTERS
71995	8411	MUSEUMS, ART GALLERIES, ZOOLOGICAL & BOTANICAL GARDENS
71995	8611	MEMBERSHIP ORGANIZATIONS
71995	8811	PRIVATE HOUSES, CONDOS, MUNICIPALITIES, & TRAILER PARKS
71995	8911	MISCELLANEOUS SERVICES (ENG., ED., R&D, ACCOUNTING, ETC.)
71995	9111	GOV., LEGISLATIVE, JUSTICE, PUBLIC ORDER & SAFETY MISC.

Parm Code	Fixed Values	Parameter Name
71995	9411	ADMINISTRATION OF HUMAN RESOURCES PROGRAMS
71995	9511	AIR & WATER RESOURCE, & SOLID WASTE MANAGEMENT
71995	9512	NATURAL RESOURCE CONSERVATION BY PUBLIC ADMINISTRATION
71995	9531	ADMIN. OF HOUSING & ECONOMIC PROGRAMS & INTERNAT'L AFFAIRS
71995	9999	WATER COMPACTS, AGREEMENTS & LEGISLATIVE ACTIONS
71995	14911	COMMERCIAL ELECTRIC ENERGY ESTABLISHMENTS - FOSSIL
71995	24911	COMMERCIAL ELECTRIC ENERGY ESTABLISHMENTS - GEOTHERMAL
71995	34911	COMMERCIAL ELECTRIC ENERGY ESTABLISHMENTS - HYDROELECTRIC
71995	44911	COMMERCIAL ELECTRIC ENERGY ESTABLISHMENTS - NUCLEAR
71996	WATER USE, SECONDARY (CODES)	
71996	111	CASH GRAINS
71996	131	FIELD CROPS - EXCEPT CASH GRAINS
71996	161	VEGETABLES AND MELONS
71996	171	FRUITS AND TREE NUTS
71996	181	HORTICULTURAL SPECIALTIES
71996	191	GENERAL FARM CROPS
71996	211	LIVESTOCK
71996	251	POULTRY AND EGGS
71996	271	ANIMAL SPECIALTIES
71996	291	GENERAL FARMS - PRIMARILY LIVESTOCK
71996	711	AGRICULTURAL SERVICES - SOIL PREP, CROP PLANTINGS, ETC.
71996	741	VETERINARY SERVICES
71996	761	ANIMAL SERVICES, FARM LABOR AND MANAGEMENT
71996	811	FORESTRY
71996	912	FISH AND WILDLIFE FARMING
71996	1011	METAL MINING
71996	1111	ANTHRACITE MINING
71996	1211	BITUMINOUS COAL AND LIGNITE MINING
71996	1311	OIL AND GAS EXTRACTION
71996	1411	MINING AND QUARRYING OF NONMETALIC MINERALS, - NONFUEL
71996	1521	BUILDING CONSTRUCTION
71996	1611	CONSTRUCTION - OTHER THAN BUILDING
71996	1711	SPECIAL TRADE (PLUMBING, HEAT, AIR, ELEC., MASONRY, ETC.)
71996	2011	MANUFACTURING - MEAT PRODUCTS
71996	2016	POULTRY AND EGG PLANTS
71996	2021	DAIRY PRODUCTS
71996	2032	CANNED & PRESERVED FRUITS AND VEGETABLES
71996	2041	GRAIN MILL PRODUCTS
71996	2051	BAKERY PRODUCTS
71996	2061	SUGAR AND CONFECTIONERY PRODUCTS
71996	2074	FATS AND OILS
71996	2084	BEVERAGES - ALCOHOLIC & SOFT DRINKS, SYRUPS & EXTRACTS
71996	2091	MISCELLANEOUS FOOD PREPARATIONS
71996	2111	TOBACCO MANUFACTURERS
71996	2211	TEXTILE MILL PRODUCTS
71996	2311	APPAREL - PRODUCTS FROM FABRICS
71996	2411	LUMBER & WOOD PRODUCTS EXCEPT FURNITURE
71996	2511	FURNITURE AND FIXTURES
71996	2611	PAPER AND ALLIED PRODUCTS

Parm Code	Fixed Values	Parameter Name
71996	2711	PRINTING, PUBLISHING, & ALLIED INDUSTRIES
71996	2821	CHEMICALS AND ALLIED PRODUCTS
71996	2911	PETROLEUM REFINING AND RELATED PRODUCTS
71996	3011	RUBBER AND MISCELLANEOUS PLASTIC PRODUCTS
71996	3111	LEATHER AND LEATHER PRODUCTS
71996	3211	STONE, CLAY, GLASS, AND CONCRETE PRODUCTS
71996	3281	CUT STONE AND STONE PRODUCTS
71996	3291	ABRASIVE, ASBESTOS, & MISCELLANEOUS NONMETALIC PRODUCTS
71996	3312	BLAST FURNACES, STEEL WORKS, & ROLLING & FINISHING MILLS
71996	3411	METAL PRODUCTS & TRANS. EQUIPMENT (NO MACHINERY)
71996	3511	MACHINERY, EXCEPT ELECTRICAL
71996	3612	ELECTRICAL & ELECTRONIC MACHINERY, EQUIPMENT & SUPPLIES
71996	3711	TRANSPORTATION EQUIPMENT REPAIRING AND PARTS
71996	3811	MEASURING, ANALYZING, & CONTROLLING INSTRUMENTS
71996	3911	MISCELLANEOUS MANUFACTURING INDUSTRIES
71996	4011	TRANSPORTATION - TRAINS, TAXICABS, AIRCRAFT
71996	4212	MOTOR FREIGHT TRANSPORTATION AND WAREHOUSING
71996	4311	U.S. POSTAL SERVICE
71996	4411	WATER TRANSPORTATION
71996	4423	WATER RECREATION ON BAYS, LAKES, RIVERS, & CANALS
71996	4511	TRANSPORTATION BY AIR
71996	4612	PIPELINES - EXCEPT NATURAL GAS
71996	4811	COMMUNICATIONS
71996	4922	GAS PRODUCTION AND DISTRIBUTION; ELEC. AND GAS SERVICE
71996	4941	WATER SUPPLY
71996	4952	SEWERAGE SYSTEMS
71996	4961	PUBLIC STEAM SUPPLY
71996	4971	IRRIGATION SYSTEMS
71996	5012	WHOLESALE TRADE - DURABLE GOODS
71996	5111	WHOLESALE TRADE - NONDURABLE GOODS
71996	5211	BUILDING MATERIALS, HARDWARE, GARDEN SUPPLY
71996	5311	GENERAL MERCHANDISE STORES
71996	5411	FOOD STORES
71996	5511	AUTO. DEALERS AND GASOLINE SERVICE STATIONS
71996	5611	APPAREL AND ACCESSORY STORES
71996	5712	FURNITURE, HOME FURNISHING, AND EQUIPMENT STORES
71996	5812	EATING AND DRINKING PLACES
71996	5912	MISCELLANEOUS RETAIL - DRUG, LIQUOR, BOOK, CAMERA, ETC.
71996	6011	BANKING
71996	6112	CREDIT AGENCIES
71996	6212	SECURITY AND COMMODITY BROKERS, DEALERS, AND SERVICES
71996	6311	INSURANCE
71996	6512	REAL ESTATE
71996	6711	HOLDING AND OTHER INVESTMENT OFFICES
71996	7011	HOTELS, MOTELS, TOURIST COURTS
71996	7021	ROOMING AND BOARDING HOUSES
71996	7032	CAMPS, TRANSIENT TRAILER PARKS, & CAMP SITES
71996	7041	ORGANIZATION HOTELS AND MEMBERSHIP LODGING HOUSES
71996	7211	LAUNDRY, CLEANING, AND GARMENT SERVICES
71996	7221	SHOPS - PHOTO, BEAUTY, BARBER, SHOE, FUNERAL SERVICES
71996	7311	ADVERTISING SERVICES

Parm Code	Fixed Values	Parameter Name
71996	7321	CONSUMER CREDIT AND COLLECTION
71996	7331	MAILING, REPRODUCTION, COMMERCIAL ART & PHOTOGRAPHY
71996	7341	SERVICE TO DWELLINGS AND OTHER BUILDINGS
71996	7351	NEWS SYNDICATES
71996	7361	EMPLOYMENT SERVICES
71996	7372	COMPUTER AND DATA PROCESSING
71996	7391	MISCELLANEOUS BUSINESS SERVICES
71996	7512	AUTOMOTIVE AND TRUCK RENTAL LEASING WITHOUT DRIVER
71996	7523	AUTOMOBILE PARKING
71996	7531	AUTOMOTIVE REPAIR SHOPS
71996	7542	CAR WASHES
71996	7549	AUTOMOTIVE SERVICES - EXCEPT REPAIR
71996	7622	MISCELLANEOUS REPAIR SERVICES
71996	7813	MOTION PICTURE-T.V. SERVICES, THEATERS, EXCEPT DRIVE-INS
71996	7911	RECREATION SERVICES, EXCEPT THEATERS AND PUBLIC GOLF
71996	7992	PUBLIC GOLF COURSES
71996	7993	COIN OPERATED AMUSEMENT DEVICES
71996	7996	AMUSEMENT PARKS, SPORTS AND RECREATION CLUBS, ETC.
71996	8011	HEALTH SERVICES (OFFICES)
71996	8051	NURSING AND PERSONAL CARE FACILITIES
71996	8062	HOSPITALS
71996	8071	MEDICAL AND DENTAL LABORATORIES
71996	8081	OUTPATIENT CARE FACILITIES
71996	8091	HEALTH & ALLIES SERVICES, NOT ELSEWHERE CLASSIFIED
71996	8111	LEGAL SERVICES
71996	8211	EDUCATIONAL SERVICES, LIBRARIES AND INFORMATION CENTERS
71996	8231	SOCIAL SERVICES & REHABILITATION CENTERS
71996	8411	MUSEUMS, ART GALLERIES, ZOOLOGICAL & BOTANICAL GARDENS
71996	8611	MEMBERSHIP ORGANIZATIONS
71996	8811	PRIVATE HOUSES, CONDOS, MUNICIPALITIES, & TRAILER PARKS
71996	8911	MISCELLANEOUS SERVICES (ENG., ED., R&D, ACCOUNTING, ETC.)
71996	9111	GOV., LEGISLATIVE, JUSTICE, PUBLIC ORDER & SAFETY MISC.
71996	9411	ADMINISTRATION OF HUMAN RESOURCES PROGRAMS
71996	9511	AIR & WATER RESOURCE, & SOLID WASTE MANAGEMENT
71996	9512	NATURAL RESOURCE CONSERVATION BY PUBLIC ADMINISTRATION
71996	9531	ADMIN. OF HOUSING & ECONOMIC PROGRAMS & INTERNAT'L AFFAIRS
71996	9999	WATER COMPACTS, AGREEMENTS & LEGISLATIVE ACTIONS
71996	14911	COMMERCIAL ELECTRIC ENERGY ESTABLISHMENTS - FOSSIL
71996	24911	COMMERCIAL ELECTRIC ENERGY ESTABLISHMENTS - GEOTHERMAL
71996	34911	COMMERCIAL ELECTRIC ENERGY ESTABLISHMENTS - HYDROELECTRIC
71996	44911	COMMERCIAL ELECTRIC ENERGY ESTABLISHMENTS - NUCLEAR
71997		WATER USE, TERTIARY (CODES)
71997	111	CASH GRAINS
71997	131	FIELD CROPS - EXCEPT CASH GRAINS
71997	161	VEGETABLES AND MELONS
71997	171	FRUITS AND TREE NUTS
71997	181	HORTICULTURAL SPECIALTIES
71997	191	GENERAL FARM CROPS
71997	211	LIVESTOCK

Parm Code	Fixed Values	Parameter Name
71997	251	POULTRY AND EGGS
71997	271	ANIMAL SPECIALTIES
71997	291	GENERAL FARMS - PRIMARILY LIVESTOCK
71997	711	AGRICULTURAL SERVICES - SOIL PREP, CROP PLANTINGS, ETC.
71997	741	VETERINARY SERVICES
71997	761	ANIMAL SERVICES, FARM LABOR AND MANAGEMENT
71997	811	FORESTRY
71997	912	FISH AND WILDLIFE FARMING
71997	1011	METAL MINING
71997	1111	ANTHRACITE MINING
71997	1211	BITUMINOUS COAL AND LIGNITE MINING
71997	1311	OIL AND GAS EXTRACTION
71997	1411	MINING AND QUARRYING OF NONMETALLIC MINERALS, - NONFUEL
71997	1521	BUILDING CONSTRUCTION
71997	1611	CONSTRUCTION - OTHER THAN BUILDING
71997	1711	SPECIAL TRADE (PLUMBING, HEAT, AIR, ELEC., MASONRY, ETC.)
71997	2011	MANUFACTURING - MEAT PRODUCTS
71997	2016	POULTRY AND EGG PLANTS
71997	2021	DAIRY PRODUCTS
71997	2032	CANNED & PRESERVED FRUITS AND VEGETABLES
71997	2041	GRAIN MILL PRODUCTS
71997	2051	BAKERY PRODUCTS
71997	2061	SUGAR AND CONFECTIONERY PRODUCTS
71997	2074	FATS AND OILS
71997	2084	BEVERAGES - ALCOHOLIC & SOFT DRINKS, SYRUPS & EXTRACTS
71997	2091	MISCELLANEOUS FOOD PREPARATIONS
71997	2111	TOBACCO MANUFACTURERS
71997	2211	TEXTILE MILL PRODUCTS
71997	2311	APPAREL - PRODUCTS FROM FABRICS
71997	2411	LUMBER & WOOD PRODUCTS EXCEPT FURNITURE
71997	2511	FURNITURE AND FIXTURES
71997	2611	PAPER AND ALLIED PRODUCTS
71997	2711	PRINTING, PUBLISHING, & ALLIED INDUSTRIES
71997	2821	CHEMICALS AND ALLIED PRODUCTS
71997	2911	PETROLEUM REFINING AND RELATED PRODUCTS
71997	3011	RUBBER AND MISCELLANEOUS PLASTIC PRODUCTS
71997	3111	LEATHER AND LEATHER PRODUCTS
71997	3211	STONE, CLAY, GLASS, AND CONCRETE PRODUCTS
71997	3281	CUT STONE AND STONE PRODUCTS
71997	3291	ABRASIVE, ASBESTOS, & MISCELLANEOUS NONMETALLIC PRODUCTS
71997	3312	BLAST FURNACES, STEEL WORKS, & ROLLING & FINISHING MILLS
71997	3411	METAL PRODUCTS & TRANS. EQUIPMENT (NO MACHINERY)
71997	3511	MACHINERY, EXCEPT ELECTRICAL
71997	3612	ELECTRICAL & ELECTRONIC MACHINERY, EQUIPMENT & SUPPLIES
71997	3711	TRANSPORTATION EQUIPMENT REPAIRING AND PARTS
71997	3811	MEASURING, ANALYZING, & CONTROLLING INSTRUMENTS
71997	3911	MISCELLANEOUS MANUFACTURING INDUSTRIES
71997	4011	TRANSPORTATION - TRAINS, TAXICABS, AIRCRAFT
71997	4212	MOTOR FREIGHT TRANSPORTATION AND WAREHOUSING
71997	4311	U.S. POSTAL SERVICE
71997	4411	WATER TRANSPORTATION

Parm Code	Fixed Values	Parameter Name
71997	4423	WATER RECREATION ON BAYS, LAKES, RIVERS, & CANALS
71997	4511	TRANSPORTATION BY AIR
71997	4612	PIPELINES - EXCEPT NATURAL GAS
71997	4811	COMMUNICATIONS
71997	4922	GAS PRODUCTION AND DISTRIBUTION; ELEC. AND GAS SERVICE
71997	4941	WATER SUPPLY
71997	4952	SEWERAGE SYSTEMS
71997	4961	PUBLIC STEAM SUPPLY
71997	4971	IRRIGATION SYSTEMS
71997	5012	WHOLESALE TRADE - DURABLE GOODS
71997	5111	WHOLESALE TRADE - NONDURABLE GOODS
71997	5211	BUILDING MATERIALS, HARDWARE, GARDEN SUPPLY
71997	5311	GENERAL MERCHANDISE STORES
71997	5411	FOOD STORES
71997	5511	AUTO. DEALERS AND GASOLINE SERVICE STATIONS
71997	5611	APPAREL AND ACCESSORY STORES
71997	5712	FURNITURE, HOME FURNISHING, AND EQUIPMENT STORES
71997	5812	EATING AND DRINKING PLACES
71997	5912	MISCELLANEOUS RETAIL - DRUG, LIQUOR, BOOK, CAMERA, ETC.
71997	6011	BANKING
71997	6112	CREDIT AGENCIES
71997	6212	SECURITY AND COMMODITY BROKERS, DEALERS, AND SERVICES
71997	6311	INSURANCE
71997	6512	REAL ESTATE
71997	6711	HOLDING AND OTHER INVESTMENT OFFICES
71997	7011	HOTELS, MOTELS, TOURIST COURTS
71997	7021	ROOMING AND BOARDING HOUSES
71997	7032	CAMPS, TRANSIENT TRAILER PARKS, & CAMP SITES
71997	7041	ORGANIZATION HOTELS AND MEMBERSHIP LODGING HOUSES
71997	7211	LAUNDRY, CLEANING, AND GARMENT SERVICES
71997	7221	SHOPS - PHOTO, BEAUTY, BARBER, SHOE, FUNERAL SERVICES
71997	7311	ADVERTISING SERVICES
71997	7321	CONSUMER CREDIT AND COLLECTION
71997	7331	MAILING, REPRODUCTION, COMMERCIAL ART & PHOTOGRAPHY
71997	7341	SERVICE TO DWELLINGS AND OTHER BUILDINGS
71997	7351	NEWS SYNDICATES
71997	7361	EMPLOYMENT SERVICES
71997	7372	COMPUTER AND DATA PROCESSING
71997	7391	MISCELLANEOUS BUSINESS SERVICES
71997	7512	AUTOMOTIVE AND TRUCK RENTAL LEASING WITHOUT DRIVER
71997	7523	AUTOMOBILE PARKING
71997	7531	AUTOMOTIVE REPAIR SHOPS
71997	7542	CAR WASHES
71997	7549	AUTOMOTIVE SERVICES - EXCEPT REPAIR
71997	7622	MISCELLANEOUS REPAIR SERVICES
71997	7813	MOTION PICTURE-T.V. SERVICES, THEATERS, EXCEPT DRIVE-INS
71997	7911	RECREATION SERVICES, EXCEPT THEATERS AND PUBLIC GOLF
71997	7992	PUBLIC GOLF COURSES
71997	7993	COIN OPERATED AMUSEMENT DEVICES
71997	7996	AMUSEMENT PARKS, SPORTS AND RECREATION CLUBS, ETC.
71997	8011	HEALTH SERVICES (OFFICES)

Parm	Fixed		Parameter Name
Code	Values		
71997	8051	NURSING AND PERSONAL CARE FACILITIES	
71997	8062	HOSPITALS	
71997	8071	MEDICAL AND DENTAL LABORATORIES	
71997	8081	OUTPATIENT CARE FACILITIES	
71997	8091	HEALTH & ALLIES SERVICES, NOT ELSEWHERE CLASSIFIED	
71997	8111	LEGAL SERVICES	
71997	8211	EDUCATIONAL SERVICES, LIBRARIES AND INFORMATION CENTERS	
71997	8231	SOCIAL SERVICES & REHABILITATION CENTERS	
71997	8411	MUSEUMS, ART GALLERIES, ZOOLOGICAL & BOTANICAL GARDENS	
71997	8611	MEMBERSHIP ORGANIZATIONS	
71997	8811	PRIVATE HOUSES, CONDOS, MUNICIPALITIES, & TRAILER PARKS	
71997	8911	MISCELLANEOUS SERVICES (ENG., ED., R&D, ACCOUNTING, ETC.)	
71997	9111	GOV., LEGISLATIVE, JUSTICE, PUBLIC ORDER & SAFETY MISC.	
71997	9411	ADMINISTRATION OF HUMAN RESOURCES PROGRAMS	
71997	9511	AIR & WATER RESOURCE, & SOLID WASTE MANAGEMENT	
71997	9512	NATURAL RESOURCE CONSERVATION BY PUBLIC ADMINISTRATION	
71997	9531	ADMIN. OF HOUSING & ECONOMIC PROGRAMS & INTERNAT'L AFFAIRS	
71997	9999	WATER COMPACTS, AGREEMENTS & LEGISLATIVE ACTIONS	
71997	14911	COMMERCIAL ELECTRIC ENERGY ESTABLISHMENTS - FOSSIL	
71997	24911	COMMERCIAL ELECTRIC ENERGY ESTABLISHMENTS - GEOTHERMAL	
71997	34911	COMMERCIAL ELECTRIC ENERGY ESTABLISHMENTS - HYDROELECTRIC	
71997	44911	COMMERCIAL ELECTRIC ENERGY ESTABLISHMENTS - NUCLEAR	
71998	WATER USE, QUATERNARY (CODES)		
71998	111	CASH GRAINS	
71998	131	FIELD CROPS - EXCEPT CASH GRAINS	
71998	161	VEGETABLES AND MELONS	
71998	171	FRUITS AND TREE NUTS	
71998	181	HORTICULTURAL SPECIALTIES	
71998	191	GENERAL FARM CROPS	
71998	211	LIVESTOCK	
71998	251	POULTRY AND EGGS	
71998	271	ANIMAL SPECIALTIES	
71998	291	GENERAL FARMS - PRIMARILY LIVESTOCK	
71998	711	AGRICULTURAL SERVICES - SOIL PREP, CROP PLANTINGS, ETC.	
71998	741	VETERINARY SERVICES	
71998	761	ANIMAL SERVICES, FARM LABOR AND MANAGEMENT	
71998	811	FORESTRY	
71998	912	FISH AND WILDLIFE FARMING	
71998	1011	METAL MINING	
71998	1111	ANTHRACITE MINING	
71998	1211	BITUMINOUS COAL AND LIGNITE MINING	
71998	1311	OIL AND GAS EXTRACTION	
71998	1411	MINING AND QUARRYING OF NONMETALIC MINERALS, - NONFUEL	
71998	1521	BUILDING CONSTRUCTION	
71998	1611	CONSTRUCTION - OTHER THAN BUILDING	
71998	1711	SPECIAL TRADE (PLUMBING, HEAT, AIR, ELEC., MASONRY, ETC.)	
71998	2011	MANUFACTURING - MEAT PRODUCTS	
71998	2016	POULTRY AND EGG PLANTS	
71998	2021	DAIRY PRODUCTS	

Parm Code	Fixed Values	Parameter Name
71998	2032	CANNED & PRESERVED FRUITS AND VEGETABLES
71998	2041	GRAIN MILL PRODUCTS
71998	2051	BAKERY PRODUCTS
71998	2061	SUGAR AND CONFECTIONERY PRODUCTS
71998	2074	FATS AND OILS
71998	2084	BEVERAGES - ALCOHOLIC & SOFT DRINKS, SYRUPS & EXTRACTS
71998	2091	MISCELLANEOUS FOOD PREPARATIONS
71998	2111	TOBACCO MANUFACTURERS
71998	2211	TEXTILE MILL PRODUCTS
71998	2311	APPAREL - PRODUCTS FROM FABRICS
71998	2411	LUMBER & WOOD PRODUCTS EXCEPT FURNITURE
71998	2511	FURNITURE AND FIXTURES
71998	2611	PAPER AND ALLIED PRODUCTS
71998	2711	PRINTING, PUBLISHING, & ALLIED INDUSTRIES
71998	2821	CHEMICALS AND ALLIED PRODUCTS
71998	2911	PETROLEUM REFINING AND RELATED PRODUCTS
71998	3011	RUBBER AND MISCELLANEOUS PLASTIC PRODUCTS
71998	3111	LEATHER AND LEATHER PRODUCTS
71998	3211	STONE, CLAY, GLASS, AND CONCRETE PRODUCTS
71998	3281	CUT STONE AND STONE PRODUCTS
71998	3291	ABRASIVE, ASBESTOS, & MISCELLANEOUS NONMETALIC PRODUCTS
71998	3312	BLAST FURNACES, STEEL WORKS, & ROLLING & FINISHING MILLS
71998	3411	METAL PRODUCTS & TRANS. EQUIPMENT (NO MACHINERY)
71998	3511	MACHINERY, EXCEPT ELECTRICAL
71998	3612	ELECTRICAL & ELECTRONIC MACHINERY, EQUIPMENT & SUPPLIES
71998	3711	TRANSPORTATION EQUIPMENT REPAIRING AND PARTS
71998	3811	MEASURING, ANALYZING, & CONTROLLING INSTRUMENTS
71998	3911	MISCELLANEOUS MANUFACTURING INDUSTRIES
71998	4011	TRANSPORTATION - TRAINS, TAXICABS, AIRCRAFT
71998	4212	MOTOR FREIGHT TRANSPORTATION AND WAREHOUSING
71998	4311	U.S. POSTAL SERVICE
71998	4411	WATER TRANSPORTATION
71998	4423	WATER RECREATION ON BAYS, LAKES, RIVERS, & CANALS
71998	4511	TRANSPORTATION BY AIR
71998	4612	PIPELINES - EXCEPT NATURAL GAS
71998	4811	COMMUNICATIONS
71998	4922	GAS PRODUCTION AND DISTRIBUTION; ELEC. AND GAS SERVICE
71998	4941	WATER SUPPLY
71998	4952	SEWERAGE SYSTEMS
71998	4961	PUBLIC STEAM SUPPLY
71998	4971	IRRIGATION SYSTEMS
71998	5012	WHOLESALE TRADE - DURABLE GOODS
71998	5111	WHOLESALE TRADE - NONDURABLE GOODS
71998	5211	BUILDING MATERIALS, HARDWARE, GARDEN SUPPLY
71998	5311	GENERAL MERCHANDISE STORES
71998	5411	FOOD STORES
71998	5511	AUTO. DEALERS AND GASOLINE SERVICE STATIONS
71998	5611	APPAREL AND ACCESSORY STORES
71998	5712	FURNITURE, HOME FURNISHING, AND EQUIPMENT STORES
71998	5812	EATING AND DRINKING PLACES
71998	5912	MISCELLANEOUS RETAIL - DRUG, LIQUOR, BOOK, CAMERA, ETC.

<u>Parm</u>	<u>Fixed</u>		<u>Parameter Name</u>
<u>Code</u>	<u>Values</u>		
71998	6011	BANKING	
71998	6112	CREDIT AGENCIES	
71998	6212	SECURITY AND COMMODITY BROKERS, DEALERS, AND SERVICES	
71998	6311	INSURANCE	
71998	6512	REAL ESTATE	
71998	6711	HOLDING AND OTHER INVESTMENT OFFICES	
71998	7011	HOTELS, MOTELS, TOURIST COURTS	
71998	7021	ROOMING AND BOARDING HOUSES	
71998	7032	CAMPS, TRANSIENT TRAILER PARKS, & CAMP SITES	
71998	7041	ORGANIZATION HOTELS AND MEMBERSHIP LODGING HOUSES	
71998	7211	LAUNDRY, CLEANING, AND GARMENT SERVICES	
71998	7221	SHOPS - PHOTO, BEAUTY, BARBER, SHOE, FUNERAL SERVICES	
71998	7311	ADVERTISING SERVICES	
71998	7321	CONSUMER CREDIT AND COLLECTION	
71998	7331	MAILING, REPRODUCTION, COMMERCIAL ART & PHOTOGRAPHY	
71998	7341	SERVICE TO DWELLINGS AND OTHER BUILDINGS	
71998	7351	NEWS SYNDICATES	
71998	7361	EMPLOYMENT SERVICES	
71998	7372	COMPUTER AND DATA PROCESSING	
71998	7391	MISCELLANEOUS BUSINESS SERVICES	
71998	7512	AUTOMOTIVE AND TRUCK RENTAL LEASING WITHOUT DRIVER	
71998	7523	AUTOMOBILE PARKING	
71998	7531	AUTOMOTIVE REPAIR SHOPS	
71998	7542	CAR WASHES	
71998	7549	AUTOMOTIVE SERVICES - EXCEPT REPAIR	
71998	7622	MISCELLANEOUS REPAIR SERVICES	
71998	7813	MOTION PICTURE-T.V. SERVICES, THEATERS, EXCEPT DRIVE-INS	
71998	7911	RECREATION SERVICES, EXCEPT THEATERS AND PUBLIC GOLF	
71998	7992	PUBLIC GOLF COURSES	
71998	7993	COIN OPERATED AMUSEMENT DEVICES	
71998	7996	AMUSEMENT PARKS, SPORTS AND RECREATION CLUBS, ETC.	
71998	8011	HEALTH SERVICES (OFFICES)	
71998	8051	NURSING AND PERSONAL CARE FACILITIES	
71998	8062	HOSPITALS	
71998	8071	MEDICAL AND DENTAL LABORATORIES	
71998	8081	OUTPATIENT CARE FACILITIES	
71998	8091	HEALTH & ALLIES SERVICES, NOT ELSEWHERE CLASSIFIED	
71998	8111	LEGAL SERVICES	
71998	8211	EDUCATIONAL SERVICES, LIBRARIES AND INFORMATION CENTERS	
71998	8231	SOCIAL SERVICES & REHABILITATION CENTERS	
71998	8411	MUSEUMS, ART GALLERIES, ZOOLOGICAL & BOTANICAL GARDENS	
71998	8611	MEMBERSHIP ORGANIZATIONS	
71998	8811	PRIVATE HOUSES, CONDOS, MUNICIPALITIES, & TRAILER PARKS	
71998	8911	MISCELLANEOUS SERVICES (ENG., ED., R&D, ACCOUNTING, ETC.)	
71998	9111	GOV., LEGISLATIVE, JUSTICE, PUBLIC ORDER & SAFETY MISC.	
71998	9411	ADMINISTRATION OF HUMAN RESOURCES PROGRAMS	
71998	9511	AIR & WATER RESOURCE, & SOLID WASTE MANAGEMENT	
71998	9512	NATURAL RESOURCE CONSERVATION BY PUBLIC ADMINISTRATION	
71998	9531	ADMIN. OF HOUSING & ECONOMIC PROGRAMS & INTERNAT'L AFFAIRS	
71998	9999	WATER COMPACTS, AGREEMENTS & LEGISLATIVE ACTIONS	
71998	14911	COMMERCIAL ELECTRIC ENERGY ESTABLISHMENTS - FOSSIL	

<u>Parm</u>	<u>Fixed</u>		<u>Parameter Name</u>
<u>Code</u>	<u>Values</u>		
71998	24911	COMMERCIAL ELECTRIC ENERGY ESTABLISHMENTS - GEOTHERMAL	
71998	34911	COMMERCIAL ELECTRIC ENERGY ESTABLISHMENTS - HYDROELECTRIC	
71998	44911	COMMERCIAL ELECTRIC ENERGY ESTABLISHMENTS - NUCLEAR	
71999	SAMPLE PURPOSE (CODES)		
71999	10	ROUTINE	
71999	15	NAWQA - NATIONAL WATER-QUALITY ASSESSMENT	
71999	20	NASQAN	
71999	30	BENCHMARK	
71999	35	RASA, REGIONAL AQUIFER SYSTEMS ANALYSIS	
71999	40	SW NETWORK	
71999	50	GW NETWORK	
71999	60	LOWFLOW NETWORK	
71999	70	HIGHFLOW NETWORK	
71999	80	ACID RAIN	
71999	80.01	BULK OR UNDEFINED (BU)	
71999	80.02	SAMPLE RELATED PROBLEM (NS)	
71999	80.03	DRY WET-SIDE SAMPLE (NA)	
71999	80.04	COMPLETELY MISSING SAMPLES (UN)	
71999	80.05	LONG DURATION SAMPLE (LD)	
71999	80.06	SAMPLING PROTOCOL (TIME) (SP)	
71999	80.07	SAMPLER MALFUNCTION (S)	
71999	90	SNOW SURVEY	
71999	100	MT. ST. HELENS	
71999	110	SEEPAGE STUDY	
71999	120	IRRIGATION EFFECTS	
71999	130	RECHARGE	
71999	140	INJECTION	
71999	150	BANK ERODIBILITY	
71999	160	NATIONAL BLANK AND SPIKE PROGRAM	
71999	170	QUALITY ASSURANCE	
71999	180	CROSS-SECTION VARIATION	
72005	SAMPLE SOURCE (CODES)		
72005	0.01	AIRLINE MEASUREMENT	
72005	0.02	ANALOG OR GRAPHIC RECORDER	
72005	0.03	CALIBRATED AIRLINE MEASUREMENT	
72005	0.04	ESTIMATED	
72005	0.05	PRESSURE-GAGE MEASUREMENT	
72005	0.06	CALIBRATED PRESSURE-GAGE MEASUREMENT	
72005	0.07	INTERPRETED FROM GEOPHYSICAL LOGS	
72005	0.08	MANOMETER MEASUREMENT	
72005	0.09	NONRECORDING GAGE	
72005	0.10	REPORTED, METHOD NOT KNOWN	
72005	0.11	STEEL-TAPE MEASUREMENT	
72005	0.12	ELECTRIC-TAPE MEASUREMENT	
72005	0.13	CALIBRATED ELECTRIC-TAPE MEASUREMENT	
72005	0.14	OTHER	
72005	1	WELL HEAD	

<u>Parm Code</u>	<u>Fixed Values</u>	<u>Parameter Name</u>
72005	2	DRILL STEM TEST
72005	3	SEPARATOR
72005	4	BOILER
72005	5	FLOW LINE
72005	6	BATTERY
72005	7	UNDESIGNATED
72005	8	TANK
72005	9	PRODUCTION TEST
72005	10	HEATER TREATER
72005	11	GUN BARREL
72005	12	SWAB
72005	13	PIT
72005	14	MANIFOLD TEST
72005	15	GAS LINE DRIP
72005	16	CASING LEAK
72005	17	WIRE LINE TEST
72005	18	HEADER
72005	19	FILTER
72005	20	TEST TOOL
72005	21	LTX UNIT
72005	22	KNOCKOUT
72005	23	WELL BLEEDER
72005	24	FRACTURE TEST
72005	25	TEST WAGON
72005	26	PUMP
72005	27	TAP NEAR WELL
72005	28	TAP AWAY FROM WELL
72005	29	BUCKET
72005	30	PRESSURE TANK
72005	31	DISCHARGE PIPE
72005	32	FOERST SAMPLER
72005	33	BAILER
72005	34	DRAIN LINE
72005	35	INJECTION PUMP
72005	36	SPOT SAMPLE IN FLUID COLUMN
72005	37	TANK BATTERY INCLUDING GUN BARREL
72005	38	WINDMILL
72005	39	WATER SIPHON
72005	40	SPECIAL
72005	41	MUNICIPAL AND DOMESTIC WASTE
72005	42	INDUSTRIAL WASTE
72005	43	STORM WATER (PRIOR TO ENTERING NATURAL CHANNELS)
72005	44	PUBLIC WATER SUPPLIES (TREATED WATER)
72005	45	MINE WATER
72005	46	PUBLIC WATER SUPPLIES (UNTREATED WATER)
72005	47	WATER WELL
72005	48	MULTIPLE WATER WELLS
72005	49	OIL WELL
72005	50	MULTI-OIL WELL
72005	51	GAS WELL
72005	52	MULTI-GAS WELL

<u>Parm</u>	<u>Fixed</u>		<u>Parameter Name</u>
<u>Code</u>	<u>Values</u>		
72005	53	OIL AND GAS WELL	
72005	54	MULTI-OIL AND GAS WELL	
72005	55	DRILLED AND ABANDONED WELL	
72005	56	PLUGGED AND ABANDONED WELL	
72005	57	JUNKED AND ABANDONED WELL	
72005	58	TEMPORARILY ABANDONED WELL	
72005	59	ABANDONED OIL WELL	
72005	60	ABANDONED GAS WELL	
72005	61	SALT-WATER SUPPLY WELL	
72005	62	SALT-WATER DISPOSAL WELL	
72005	63	INJECTION WELL	
72005	64	SERVICE WELL	
72005	65	WETLAND ECOSYSTEM	
72005	66	DREDGE WAKE	
72005	67	MAINSTREAM	
72005	68	OVERBANK	
72005	69	COMPOSITED PUBLIC WATER SUPPLY(UNTREATED WATER)	
72005	70	COMPOSITED PUBLIC WATER SUPPLY(TREATED WATER)	
72005	72	INTERSTITIAL WATER	
72005	74	LYSIMETER	
72005	76	OIL OR GAS TEST WELL CONVERTED TO WATER WELL	
72005	77	SURFICIAL BANK	
72005	78	INTERIOR BANK	
72005	79	BEFORE PRESSURE TANK	
72005	80	AFTER PRESSURE TANK	
72005	100	DOMESTIC SUPPLY-UNTREATED	
72005	110	DOMESTIC SUPPLY-TREATED	
72005	1001	WET DEPOSITION	
72005	1002	DUSTFALL	
72005	1003	LANDFILL	
72005	1004	CAST OVERBURDEN	
72005	1005	STREET SWEEPING	
72005	1006	LANDFILL SEEP	
72006	SAMPLING CONDITION (CODES)		
72006	0.01	THE SITE WAS DRY (NO WATER LEVEL IS RECORDED)	
72006	0.02	THE SITE HAD BEEN FLOWING RECENTLY	
72006	0.03	THE SITE WAS FLOWING, HEAD COULD NOT BE MEASURED	
72006	0.04	A NEARBY SITE THAT TAPS THE AQUIFER WAS FLOWING	
72006	0.05	NEARBY SITE TAPPING SAME AQUIFER HAD BEEN FLOWING RECENTLY	
72006	0.06	INJECTOR SITE	
72006	0.07	INJECTOR SITE MONITOR	
72006	0.08	MEASUREMENT DISCONTINUED	
72006	0.09	OBSTRUCTION ENCOUNTERED IN WELL ABOVE WATER SURFACE	
72006	0.10	THE SITE WAS BEING PUMPED	
72006	0.11	THE SITE HAD BEEN PUMPED RECENTLY	
72006	0.12	NEARBY SITE TAPPING THE SAME AQUIFER WAS BEING PUMPED	
72006	0.13	NEARBY SITE TAPPING THE SAME AQUIFER WAS PUMPED RECENTLY	
72006	0.14	FOREIGN SUBSTANCE PRESENT ON THE SURFACE OF THE WATER	
72006	0.15	WELL DESTROYED	

Appendix B: Fixed Value Codes

Parm Code	Fixed Values	Parameter Name
72006	0.16	WATER LEVEL AFFECTED BY STAGE IN NEARBY SITE
72006	0.17	OTHER CONDITIONS AFFECTING THE MEASURED WATER LEVEL
72006	1	TESTING
72006	2	UNDESIGNATED
72006	3	SWABBING
72006	4	FLOWING
72006	5	REVERSING OUT
72006	6	FLOWING ON GAS LIFT
72006	7	AFTER ACIDIZING
72006	8	PUMPING
72006	9	MILLIPORE FILTER
72006	10	OPEN HOLE
72006	11	FLOWING ON DRILL STEM TEST
72006	12	AFTER DRILL STEM TEST
72006	15	BAILING
72006	16	AFTER PERFORATION
72006	17	TUBING FLOW
72006	18	PRODUCING
72006	19	CIRCULATING
72006	20	FLOWING ON PRODUCTION TEST
72006	21	FLOWING ON POTENTIAL TEST
72006	22	LIFTING
72006	23	FLOWING TO PIT
72006	24	WATER FLOODING
72006	25	JETTING
72006	26	PRODUCTION AND DEVELOPMENT TEST
72006	27	PRODUCTION BY UNKNOWN METHOD
72006	30	SEEPPING
72006	31	NEARBY WELL PUMPING
72006	32	NEARBY WELL TAKING WATER
72006	33	WELL TAKING WATER
72006 SAMPLING CONDITION (CODES)		
74200	1	FA, POLY BOTTLE ACID RINSED
74200	3	FAB, TEFLON BOTTLE, ACID RINSED, 250 ML
74200	5	FAR, POLY BOTTLE, ACID RINSED, 2 L
74200	7	FC, BROWN POLY BOTTLE, FIELD RINSED, 250 ML
74200	9	FU, POLY BOTTLE, FIELD RINSED
74200	11	RA, POLY BOTTLE, ACID RINSED
74200	13	RAB, TEFLON BOTTLE, ACID RINSED, 250 ML
74200	15	RAE, POLY BOTTLE, ACID RINSED, 250 ML
74200	17	RAH, POLY BOTTLE, ACID RINSED, 250 ML
74200	19	RC, BROWN POLY BOTTLE, FIELD RINSED, 250 ML
74200	21	RU, POLY BOTTLE, FIELD RINSED
74200	23	RUR, POLY BOTTLE, ACID RINSED, 2 L
74200	25	LC0023, POLY BOTTLE, FIELD RINSED, 250 ML
74200	27	LC0076, GLASS BOTTLE BAKED AT 350 DEG C., 125 ML
74200	29	LC0089, POLY BOTTLE, FIELD RINSED, 250 ML
74200	31	LC0239, POLY BOTTLE, ACID RINSED, 1 L
74200	33	LC0298, CONTACT DENVER CENTRAL LAB

Parm Code	Fixed Values	Parameter Name
74200	35	LC0300, GLASS BOTTLE, FIELD RINSED, 250 ML
74200	39	LC0439, STEEL BARREL
74200	41	LC0440, GLASS BOTTLE, FIELD RINSED, 500 ML
74200	43	LC0452, POLY BOTTLE, FIELD RINSED, 125 ML
74200	45	LC0489, GLASS BOTTLE, FIELD RINSED, 125 ML
74200	47	LC0490, CONTACT DENVER CENTRAL LAB
74200	49	LC0491, CONTACT DENVER CENTRAL LAB
74200	51	LC0880, POLY BOTTLE, FIELD RINSED, 250 ML
74200	53	LC0995, CONTACT DENVER CENTRAL LAB
74200	55	LC0996, GLASS BOTTLE, FIELD RINSED
74200	57	LC0997, CONTACT DENVER CENTRAL LAB
74200	59	CL, SEPTUM BOTTLE, 40 ML
74200	61	GCC, GLASS BOTTLE, 1 L
74200	63	GCV, SEPTUM BOTTLE, 40 ML
74200	65	RCB POLY BOTTLE, FIELD RINSED, 250 ML
74200	67	LC0052, GLASS BOTTLE, 1 L
74200	69	LC0113, GLASS BOTTLE, 125 ML
74200	71	LC0114, GLASS BOTTLE, 125 ML
74200	73	LC0127, GLASS BOTTLE, 1 L
74200	75	LC0305, 0.45 MICRON SILVER FILTER (IN PETRI DISH)
74200	77	FU, POLY BOTTLE, FIELD RINSED, 500 ML
74200	79	RCB, POLY BOTTLE, FIELD RINSED 250 ML
74200	81	RU, POLY BOTTLE, FIELD RINSED, 500 ML
74200	83	LC0050, POLY BOTTLE, 250 ML
74200	85	LC0169, POLY BOTTLE, FIELD RINSED, 500 ML
74200	87	CC, PLASTIC FREEZER CARTON, 1 PT
74200	89	CU, PLASTIC FREEZER CARTON, 1 PT
74200	91	BGC, WIDE MOUTH GLASS BOTTLE, 1 L
74200	93	CC, PLASTIC FREEZER CARTON, 1 PT
74200	95	PP, CONTACT DENVER CENTRAL LABORATORY
74200	97	SIZE, UNTREATED
74200	99	BEN, POLY BOTTLE, WIDE MOUTH
74200	101	CHE, GLASS JAR, WIDE MOUTH
74200	103	CHY, GLASS VIAL
74200	105	DIA, CONTACT ATLANTA CENTRAL LABORATORY
74200	107	PER, CONTACT ATLANTA CENTRAL LABORATORY
74200	109	SHY, POLY BOTTLE
74200	111	ST, POLY BOTTLE
74200	113	ZOO, CONTACT ATLANTA CENTRAL LABORATORY
74200	115	LC0055, POLY BOTTLE
74200	117	LC0438, CONTACT DENVER CENTRAL LAB
74200	119	LC0616, GLASS VIAL
74200	121	LC1049, WIDE MOUTH GLASS BOTTLE, 1 L
74200	123	FAM, GLASS BOTTLE, ACID RINSED, 250 ML
74200	125	FCU, BROWN POLY BOTTLE, FIELD RINSED, 250 ML
74200	127	RAM, GLASS BOTTLE, ACID RINSED, 250 ML
74200	129	LCO460, POLY BOTTLE, FIELD RINSED, 500 ML
74200	131	LCO881, POLY BOTTLE, FIELD RINSED, 125 ML
74200	133	LC1043, GLASS BOTTLE, FIELD RINSED, 1 L
74200	135	LC1199, CONTACT DENVER CENTRAL LAB
74200	137	LC0019, GLASS BOTTLE, 125 ML

<u>Parm Code</u>	<u>Fixed Values</u>	<u>Parameter Name</u>
74200	139	LC0306, GLASS BOTTLE, 125 ML
74200	141	LC1038, PLASTIC FREEZER CARTON, 1 PT
74200	143	LC0961, CONTACT DENVER CENTRAL LAB
74995 ANATOMY		
74995	1	ALIMENTARY
74995	2	MOUTH
74995	3	TEETH
74995	4	ESOPHAGUS
74995	5	STOMACH
74995	6	LIVER
74995	7	INTESTINE
74995	8	BLADDER, GALL
74995	9	ANUS
74995	10	CARDIO-VASCULAR
74995	11	HEART
74995	12	HEART/VENTRICLE
74995	13	HEART/BULB ART
74995	14	HEART/AURICLE
74995	15	HEART/CONUS ART
74995	16	ARTERIES
74995	17	VEINS
74995	18	ENDOCRINE
74995	19	CYCLIC CHANGE
74995	20	PITUITARY
74995	21	RENAL BODY
74995	22	ADRENAL
74995	23	SUPRARENAL
74995	25	ULTIMABRAN BODY
74995	26	PSEUDOBRANCH
74995	27	CORP OF STAN
74995	28	THYROID
74995	29	PANCREAS
74995	30	SAC VASCULE
74995	31	EXCRETORY
74995	32	KIDNEY
74995	33	KIDNEY/GLOM
74995	34	KIDNEY/AGLOM
74995	35	KIDNEY/URIN TUB
74995	36	KIDNEY/COLL TUB
74995	37	BLADDER
74995	38	URETERS
74995	39	URINARY PORE
74995	40	HEMOPOIETIC
74995	41	HEAD KIDNEY
74995	42	THYMUS
74995	43	SPLEEN
74995	44	LYMPHOCYTES
74995	45	NUCLEATED RBS'S
74995	46	THROMBOCYTES

Parm Code	Fixed Values	Parameter Name
74995	47	EOSINOPHILES
74995	48	HETEROPHILES
74995	49	GRANULOCYTES
74995	50	MUSCO-SKEL
74995	51	MUSCLE/SOMATIC
74995	52	MUSCLE/VISCERAL
74995	53	BONE/CELLULAR
74995	54	BONE/ACELLULAR
74995	55	CARTILAGE
74995	56	CONN TISSUE
74995	57	SCALE
74995	58	SKIN
74995	59	ORGANISM, WHOLE
74995	60	NERVOUS
74995	61	BRAIN
74995	62	SPINAL CORD
74995	63	GANGLIONS
74995	64	NEURONS
74995	65	NERVE FIBERS
74995	66	REPRODUCTIVE
74995	67	REPRO CYC CHAN
74995	68	MALE
74995	69	FEMALE
74995	70	OVARY
74995	71	RESPIRATORY
74995	72	GILLS
74995	73	RESP EPITHELIUM
74995	74	CELLS, CHLORIDE
74995	75	CELLS, SECRETORY
74995	76	GILL RAKERS
74995	77	SENSORY
74995	78	LATERAL LINE
74995	79	NASAL PASSAGES
74995	80	TENTACLES
74995	81	EYES
74995	82	EARS
74995	83	NEUROEPITHELIUM
74995	84	BLADDER, SWIM
74995	85	SYSTEM, LYMPH
74995	86	FILLET
74995	87	EDIBLE PORTION
74995	88	HEADLESS WHOLE FISH
74995	89	ORGANISIM, WHOLE, EVISCERATED
74995	90	VISCERA
74995	91	LIPID TISSUE
74995	92	FRY
74995	93	EGGS
74995	94	UNKNOWN
74995	95	NO HEAD OR VISC
74995	96	NO SKIN,HD,VISC
74995	97	EXOSKELETON

Appendix B: Fixed Value Codes

<u>Parm Code</u>	<u>Fixed Values</u>	<u>Parameter Name</u>
74995	98	LIPS
74995	99	PHARYNX
74995	100	CAECA
74995	101	CAPILLARIES
74995	102	SYSTEM, CENTRAL NERVOUS
74995	103	TESTES
74995	104	GILL LAMELLAE
74995	105	GILL FILAMENTS
74995	106	NEUROMASTS
74995	107	PIT ORGAN
74995	108	TASTE BUDS
74995	109	HYPOPHYSIS
74995	110	SACCUS VASCULOSUS
74995	111	UROPHYSIS
74995	112	PINEAL GLAND
74995	113	CHOROID GLAND
74995	114	PLASMA
74995	115	LARVAE
74995	116	CARCASS
74995	117	FILET/SKIN
74995	118	FILET DORSAL PIECE

82309 CONTAMINATION SOURCE, POSSIBLE (CODES)

82309	1	OIL SPILL
82309	3	GAS SPILL
82309	5	ORGANIC
82309	7	PESTICIDE
82309	9	HERBICIDE
82309	11	INSECTICIDE
82309	13	FEEDLOT RUNOFF
82309	15	SALT WATER
82309	17	INJECTION WELL
82309	19	SEWAGE TREATMENT PLANT
82309	21	LAND SPREADING
82309	23	LANDFILL
82309	25	SLUDGE DUMP
82309	27	WASTE LAGOON
82309	29	URBAN RUNOFF
82309	31	MINE DRAINAGE
82309	33	CONSTRUCTION DRAINAGE
82309	35	PULP MILL OUTFALL
82309	37	TEXTILE MILL OUTFALL
82309	39	IRRIGATION RUNOFF
82309	41	FERTILIZER
82309	43	DAIRY OPERATION

82398 SAMPLING METHOD (CODES)

82398	10	EQUAL WIDTH INCREMENT (EWI)
82398	20	EQUAL DISCHARGE INCREMENT (EDI)

Parm Code	Fixed Values	Parameter Name
82398	25	TIMED SAMPLING INTERVAL
82398	30	SINGLE VERTICAL
82398	40	MULTIPLE VERTICALS
82398	50	POINT SAMPLE
82398	60	WEIGHTED BOTTLE
82398	70	GRAB SAMPLE (DIP)
82398	80	DISCHARGE INTEGRATED, EQUAL TRANSIT RATE (ETR)
82398	90	DISCHARGE INTEGRATED, CENTROID
82398	100	VAN DORN SAMPLER
82398	110	SEWAGE SAMPLER
82398	120	VELOCITY INTEGRATED
82398	200	ZOOPLANKTON-NET
82398	210	BENTHIC INVERTEBRATE-MECHANICAL GRAB
82398	220	BENTHIC INVERTEBRATE-MECHANICAL DREDGE
82398	230	BENTHIC INVERTEBRATE-ARTIFICIAL SUBSTRATE
82398	240	BENTHIC INVERTEBRATE-NATURAL SUBSTRATE
82398	250	BENTHIC INVERTEBRATE-NET
82398	260	PHYTOPLANKTON-NET
82398	270	PHYTOPLANKTON-WATER BOTTLE
82398	280	PERIPHYTE-NATURAL SUBSTRATE
82398	290	PERIPHYTE-ARTIFICIAL SUBSTRATE
82398	1000	BEDLOAD, SINGLE EQUAL WIDTH INCREMENT (SEWI)
82398	1010	BEDLOAD, MULTIPLE EQUAL WIDTH INCREMENT (MEWI)
82398	1020	BEDLOAD, UNEQUAL WIDTH INCREMENT (UWI)
82398	4010	THIEF SAMPLE
82398	4020	OPEN-TOP BAILER
82398	4025	DOUBLE-VALVE BAILER
82398	4030	SUCTION PUMP
82398	4031	SUCTION LIFT CENTRIFUGAL PUMP
82398	4032	SUCTION LIFT JET PUMP
82398	4033	SUCTION LIFT PERISTALTIC PUMP
82398	4040	SUBMERSIBLE PUMP
82398	4041	SUBMERSIBLE BLADDER PUMP
82398	4042	SUBMERSIBLE GAS RECIPROCATING PUMP
82398	4043	SUBMERSIBLE GAS LIFT PUMP
82398	4044	SUBMERSIBLE JET PUMP
82398	4045	SUBMERSIBLE MULTIPLE IMPELLER (TURBINE) PUMP
82398	4046	SUBMERSIBLE HELICAL ROTOR PUMP
82398	4047	SUBMERSIBLE GEAR PUMP
82398	4048	SUBMERSIBLE GAS-DISPLACEMENT PUMP
82398	4050	SQUEEZE PUMP
82398	4060	GAS RECIPROCATING PUMP
82398	4070	GAS LIFT
82398	4080	PERISTALTIC PUMP
82398	4090	JET PUMP
82398	4100	FLOWING WELL
82398	4110	RESIN TRAP COLLECTOR
82398	8010	OTHER
82398	8020	SYRINGE SAMPLE
82398	8030	GRAB SAMPLE AT WATER-SUPPLY TAP

<u>Parm Code</u>	<u>Fixed Values</u>	<u>Parameter Name</u>
82923 ATMOSPHERIC DEPOSITION TYPE WET, (CODES)		
82923	1	SNOW
82923	2	HAIL
82923	3	MIXTURE (RAIN, SNOW, AND OR HAIL)
82923	4	RAIN
82923	9.99	UNKNOWN
82305 ATMOSPHERIC DEPOSITION TYPE BULK, (CODES)		
83205	1	SNOW
83205	2	HAIL
83205	3	MIXTURE (RAIN, SNOW, AND OR HAIL)
83205	4	RAIN
83205	9.99	UNKNOWN
84060 TOPOGRAPHY, PHYSIOGRAPHIC SETTING (CODES)		
84060	10	ALLUVIAL FAN
84060	20	PLAYA
84060	30	STREAM CHANNEL
84060	40	LOCAL DEPRESSION
84060	50	DUNES
84060	60	FLAT SURFACE
84060	70	FLOOD PLAIN
84060	80	HILLTOP
84060	90	SINKHOLE
84060	100	LAKE, SWAMP, OR MARSH
84060	110	MANGROVE SWAMP
84060	120	OFFSHORE (ESTUARY)
84060	130	PEDIMENT
84060	140	HILLSIDE (SLOPE)
84060	150	TERRACE, ALLUVIAL OR MARINE
84060	160	UNDULATING
84060	170	VALLEY FLAT
84060	180	UPLAND DRAW
84143 WELL PURGING CONDITION (CODES)		
84143	100	WELL PURGED TO STABLE PH
84143	110	WELL PURGED TO STABLE TEMPERATURE
84143	120	WELL PURGED TO STABLE SPECIFIC CONDUCTANCE
84143	130	WELL PURGED TO STABLE PH AND TEMPERATURE
84143	140	WELL PURGED TO STABLE PH AND SPECIFIC CONDUCTANCE
84143	150	WELL PURGED TO STABLE TEMPERATURE AND SPECIFIC CONDUCTANCE
84143	160	WELL PURGED TO STABLE PH, TEMP. AND SPECIFIC CONDUCTANCE
84143	170	WELL PURGED, AT LEAST THREE WELL VOLUMES
84143	500	WELL NOT PURGED, WATER IN CASING LESS THAN 6 HOURS
84143	510	WELL NOT PURGED, WATER IN CASING 6-12 HOURS
84143	520	WELL NOT PURGED, WATER IN CASING 12-24 HOURS
84143	530	WELL NOT PURGED, WATER IN CASING MORE THAN 24 HOURS

<u>Parm Code</u>	<u>Fixed Values</u>	<u>Parameter Name</u>
84144 WELL SELECTION CRITERIA (CODES)		
84144 100	SITE SELECTED BECAUSE IT IS NEAR/WITHIN LOCAL PROBLEM AREA	
84144 200	SITE SELECTED WITHOUT REGARD TO LOCAL PROBLEM AREA	
84145 PROJECT COMPONENT (CODES)		
84145 100	REGIONAL SAMPLING	
84145 200	TARGETED SAMPLING (AGRICULTURAL AREA)	
84145 300	TARGETED SAMPLING (URBAN OR SUBURBAN AREA)	
84145 400	TARGETED SAMPLING (NATURALLY OCCURRING SUBSTANCES)	
84145 500	TARGETED SAMPLING (LOCAL-SCALE NETWORK)	
84145 600	TARGETED SAMPLING (OTHER)	
84145 700	GEOCHEMICAL INVESTIGATION	
84146 LAND USE, PREDOMINANT, WITHIN 200 FEET OF WELL, (CODES)		
84146 110	RESIDENTIAL	
84146 120	COMMERCIAL AND SERVICES	
84146 130	INDUSTRIAL	
84146 170	OTHER URBAN OR BUILT-UP LAND	
84146 211	NONIRRIGATED CROPLAND	
84146 212	IRRIGATED CROPLAND	
84146 213	PASTURE	
84146 220	ORCHARDS, GROVES, VINEYARDS, NURSERIES	
84146 230	CONFINED FEEDING OPERATIONS	
84146 240	OTHER AGRICULTURAL LAND	
84146 300	RANGELAND	
84146 400	FORESTLAND	
84146 500	WATER	
84146 600	WETLAND	
84146 700	BARREN LAND	
84147 LAND USE, PREDOMINANT, WITHIN 0.25 MILE OF WELL (CODES)		
84147 110	RESIDENTIAL	
84147 120	COMMERCIAL AND SERVICES	
84147 130	INDUSTRIAL	
84147 170	OTHER URBAN OR BUILT-UP LAND	
84147 211	NONIRRIGATED CROPLAND	
84147 212	IRRIGATED CROPLAND	
84147 213	PASTURE	
84147 220	ORCHARDS, GROVES, VINEYARDS, NURSERIES	
84147 230	CONFINED FEEDING OPERATIONS	
84147 240	OTHER AGRICULTURAL LAND	
84147 300	RANGELAND	
84147 400	FORESTLAND	
84147 500	WATER	
84147 600	WETLAND	
84147 700	BARREN LAND	

<u>Parm Code</u>	<u>Fixed Values</u>	<u>Parameter Name</u>
84148 LAND USE, PREDOMINANT FRACTION, WITHIN 0.25 MILE OF WELL (CODES)		
84148 25	LESS THAN 25 PERCENT	
84148 50	FROM 26 PERCENT TO 50 PERCENT	
84148 75	FROM 51 PERCENT TO 75 PERCENT	
84148 100	FROM 76 PERCENT TO 100 PERCENT	
84149 LAND-USE CHANGES WITHIN LAST 10 YEARS, WITHIN 0.25 MILE OF WELL (CODES)		
84149 100	YES	
84149 200	PROBABLY	
84149 300	PROBABLY NOT	
84149 400	NO	
84164 SAMPLER TYPE, (CODES)		
84164 100	VAN DORN SAMPLER	
84164 110	SEWAGE SAMPLE	
84164 120	VELOCITY INTEGRATED SAMPLE	
84164 125	KEMMERER BOTTLE	
84164 200	ZOOPLANKTON NET	
84164 210	BENTHIC INVERTEBRATE-MECHANICAL, GRAB	
84164 220	BENTHIC INVERTEBRATE-MECHANCIAL, DREDGE	
84164 230	BENTHIC INVERTEBRATE-ARTIFICIAL SUBSTRATE	
84164 240	BENTHIC INVERTEBRATE-NATURAL SUBSTRATE	
84164 250	BENTHIC INVERTEBRATE-NET	
84164 260	PHYTOPLANKTON NET	
84164 270	PHYTOPLANKTON-WATER BOTTLE	
84164 280	PERIPHYTON-NATURAL SUBSTRATE	
84164 290	PERIPHYTON-ARTIFICIAL SUBSTRATE	
84164 1000	BEDLOAD-HELLEY-SMITH, 3 X 3, AREA RATIO 3.22	
84164 1010	BEDLOAD-HELLEY-SMITH, 6 X 6, AREA RATIO 3.22	
84164 1020	BEDLOAD-HELLEY-SMITH, 3 X 3, AREA RATIO 1.40	
84164 1030	BEDLOAD-HELLEY-SMITH, 6 X 6, AREA RATIO 1.40	
84164 1040	BEDLOAD-HELLEY-SMITH, 6 X 12, AREA RATIO 1.40	
84164 1050	BEDLOAD-TOUTLE RIVER TYPE 2, 6 X 12, AREA RATIO 1.40	
84164 1060	BEDLOAD-BL-84, 3 X 3, AREA RATION, 1.40	
84164 1070	BEDLOAD-TOUTLE RIVER TYPE 1, 6 X 6, AREA RATIO 3.22	
84164 1080	BEDLOAD-HUBBLE #5, 6 X 12, AREA RATIO, 1.40	
84164 1090	FIASP, 3 X 3, AREA RATIO 1.40	
84164 1100	3X3 INCH H-S, 1/4-IN THICK NOZZLE, 50-100 LBS, CABLE SUSP	
84164 1110	3X3 INCH H-S, 1/4-IN THICK NOZZLE, 100-200 LBS, CABLE SUSP	
84164 1120	3X3 INCH H-S, 1/4-INCH THICK NOZZLE, WADING	
84164 1130	3X3 INCH H-S, SHEET METAL NOZZLE, WADING	
84164 1140	3X3 INCH FIASP, 1/4-IN THICK NOZZLE, 50-100LBS, CABLE SUSP	
84164 1150	3X3 INCH FIASP, 1/4-INCH THICK NOZZLE, WADING	
84164 1160	3X3 INCH FIASP, SHEET METAL NOZZLE, WADING	
84164 1170	6X6 IN H-S, 1/4-IN THICK NOZZLE, 150-200 LBS, CABLE SUSP	
84164 3001	Sampler, US DH-48	
84164 3002	Sampler, US DH-59	

Parm Code	Fixed Values	Parameter Name
84164	3003	Sampler, US DH-75P
84164	3004	Sampler, US DH-75Q
84164	3005	Sampler, US DH-76
84164	3006	Sampler, US D-43
84164	3007	Sampler, US D-49
84164	3008	Sampler, US D-49AL
84164	3009	Sampler, US D-74
84164	3010	Sampler, US D-74AL
84164	3011	Sampler, US D-77
84164	3012	Sampler, US P-46
84164	3013	Sampler, US P-50
84164	3014	Sampler, US P-61-A1
84164	3015	Sampler, US P-63
84164	3016	Sampler, US P-72
84164	3017	Sampler, US U-59
84164	3018	Sampler, US U-73
84164	3019	Sampler, US PS-69
84164	3020	Sampler, US PS-69TM
84164	3021	Sampler, US CS-77
84164	3022	Sampler, US PS-82
84164	3023	Sampler, US BMH-53
84164	3024	Sampler, US BMH-53TM
84164	3025	Sampler, US BM-54
84164	3026	Sampler, US BM-54TM
84164	3027	Sampler, US BMH-60
84164	3028	Sampler, US BMH-60TM
84164	3029	Sampler, US RBM-80
84164	3030	US DH-48 TM
84164	3031	US DH-48 TM W/ TEFLON GASKET AND NOZZLE
84164	3032	US DH-59 TM
84164	3033	US DH-59 TM W/ TEFLON GASKET AND NOZZLE
84164	3034	US DH-76 TM
84164	3035	US DH-76 TM W/ TEFLON GASKET AND NOZZLE
84164	3036	US D-74 TM
84164	3037	US D-74 AL-TM
84164	3038	US D-74 AL-TM W/ TEFLON GASKET AND NOZZLE
84164	3039	US D-77 TM
84164	3040	US D-77 TM MODIFIED TEFLON BAG SAMPLER
84164	3041	US P-61 AL-TM
84164	3042	US P-61
84164	3043	US P-61 TM
84164	3044	US DH-81
84164	3045	US DH-81 WITH TEFLON CAP AND NOZZLE
84164	3046	SAMPLER, D-77 TM, W/REYNOLDS OVEN COLLAPSIBLE BAG
84164	3047	SAMPLER, FRAME-TYPE, PLASTIC BOTTLE W/REYNOLDS OVEN BAG
84164	3048	SAMPLER, FRAME-TYPE, TEFLON BOTTLE
84164	3049	SAMPLER, FRAME-TYPE, PLASTIC BOTTLE
84164	3050	SAMPLER, FRAME-TYPE, PLASTIC BOTTLE W/TEFLON COLLAPS. BAG
84164	3051	US DH-95 TEFLON BOTTLE
84164	3052	US DH-95 PLASTIC BOTTLE
84164	3053	US D-95 TEFLON BOTTLE

Appendix B: Fixed Value Codes

<u>Parm</u>	<u>Fixed</u>		<u>Parameter Name</u>
<u>Code</u>	<u>Values</u>		
84164	3054	US D-95 PLASTIC BOTTLE	
84164	3055	US D-96 BAG SAMPLER	
84164	3060	WEIGHTED-BOTTLE SAMPLER	
84164	3061	US WBH-96 WEIGHTED-BOTTLE SAMPLER	
84164	3070	GRAB SAMPLE	
84164	3080	VOC HAND SAMPLER	
84164	4010	THIEF SAMPLER	
84164	4020	OPEN-TOP BAILER	
84164	4025	DOUBLE-VALVE BAILER	
84164	4030	SUCTION PUMP	
84164	4035	SUBMESIBLE CENTRIFUGAL PUMP	
84164	4040	SUBMERSIBLE POSITIVE-PRESSURE PUMP	
84164	4041	SUBMERSIBLE HELICAL ROTOR PUMP	
84164	4045	SUBMERSIBLE GEAR PUMP	
84164	4050	BLADDER PUMP	
84164	4060	GAS RECIPROCATING PUMP	
84164	4070	GAS LIFT	
84164	4075	SUBMERSIBLE PISTON PUMP	
84164	4080	PERISTALTIC PUMP	
84164	4090	JET PUMP	
84164	4095	LINE-SHAFT TURBINE PUMP	
84164	4100	FLOWING WELL	
84164	4110	RESIN TRAP COLLECTOR	
84164	8000	NONE	
84164	8010	OTHER	

99100 BLANK, TYPE OF SOLUTION, FIXED VALUE CODE

99100	10	DISTILLED/DEIONIZED WATER
99100	20	STANDARD REFERENCE WATER SAMPLE
99100	30	MATCHED MATRIX
99100	40	ORGANIC-FREE WATER
99100	50	VOC FREE WATER
99100	200	OTHER

99101 BLANK, SOURCE OF SOLUTION, FIXED VALUE CODE

99101	10	NATIONAL WATER QUALITY LAB (USGS)
99101	20	U.S. ENVIRONMENTAL PROTECTION AGENCY
99101	30	STANDATD REFERENCE WATER SAMPLE (USGS)
99101	35	MIX OF STANDARD REFERENCE WATER SAMPLE
99101	40	NIST (FORMERLY NBS)
99101	50	CANADIAN INLAND WATERS
99101	60	DISTRICT LAB
99101	61	SUBDISTRICT #1 LAB
99101	62	SUBDISTRICT #2 LAB
99101	63	SUBDISTRICT #3 LAB
99101	64	SUBDISTRICT #4 LAB
99101	70	NATURAL SAMPLE
99101	71	FIELD OFFICE #1 LAB
99101	72	FIELD OFFICE #2 LAB

<u>Parm</u>	<u>Fixed</u>		<u>Parameter Name</u>
<u>Code</u>	<u>Values</u>		
99101	73	FIELD OFFICE #3 LAB	
99101	74	FIELD OFFICE #4 LAB	
99101	80	OCALA LAB (USGS)	
99101	99.99	UNKNOWN	
99101	100	CHEMICAL SUPPLIER	
99101	110	BURDICK AND JACKSON	
99101	120	J.T. BAKER	
99101	200	OTHER	
99102	BLANK, TYPE OF SAMPLE, FIXED VALUE CODE		
99102	1	SOURCE SOLUTION	
99102	10	SHELF (HOLD)	
99102	20	REFRIGERATOR	
99102	30	TRIP	
99102	40	SAMPLER	
99102	50	SPLITTER	
99102	60	FILTER	
99102	70	PRESERVATION	
99102	80	EQUIPMENT	
99102	90	AMBIENT	
99102	100	FIELD	
99102	150	LAB BLANK	
99102	200	OTHER	
99103	REFERENCE MATERIAL, SOURCE, FIXED VALUE CODE		
99103	10	NATIONAL WATER QUALITY LAB (USGS)	
99103	20	U.S. ENVIRONMENTAL PROTECTION AGENCY	
99103	30	STANDARD REFERENCE WATER SAMPLE (USGS)	
99103	35	MIX OF STANDARD REFERENCE WATER SAMPLES	
99103	40	NIST (FORMERLY NBS)	
99103	50	CANADIAN INLAND WATERS	
99103	60	DISTRICT LAB	
99103	70	NATURAL SAMPLE	
99103	80	OCALA LAB (USGS)	
99103	99.99	UNKNOWN	
99103	100	CHEMICAL SUPPLIER	
99103	200	OTHER	
99105	REPLICATE, TYPE, FIXED VALUE CODE		
99105	10	CONCURRENT	
99105	20	SEQUENTIAL	
99105	30	SPLIT	
99105	40	SPLIT-CONCURRENT	
99105	50	SPLIT-SEQUENTIAL	
99105	200	OTHER	
99106	SPIKE, TYPE, FIXED VALUE CODE		

Appendix B: Fixed Value Codes

<u>Parm Code</u>	<u>Fixed Values</u>	<u>Parameter Name</u>
99106	10	FIELD
99106	20	LABORATORY
99106	30	SURROGATE
99106	40	INTERNAL STANDARDS
99106	200	OTHER
99107	SPIKE, SOURCE, FIXED VALUE CODE	
99107	10	NATIONAL WATER QUALITY LAB (USGS)
99107	20	U.S. ENVIRONMENTAL PROTECTION AGENCY
99107	30	STANDARD REFERENCE WATER SAMPLE (USGS)
99107	35	MIX OF STANDARD REFERENCE WATER SAMPLE
99107	40	NIST (FORMERLY NBS)
99107	50	CANADIAN INLAND WATERS
99107	60	DISTRICT LAB
99107	70	NATURAL SAMPLE
99107	80	OCALA LAB (USGS)
99107	99.99	UNKNOWN
99107	100	CHEMICAL SUPPLIER
99107	110	SUPERCO
99107	120	PROTOCOL ANALYTICAL SUPPLIES, INC.
99107	200	OTHER
99111	QUALITY ASSURANCE DATA TYPE ASSOCIATED WITH SAMPLE, CODE	
99111	1	NO ASSOCIATED QA DATA
99111	10	BLANK
99111	20	BLIND SAMPLE
99111	30	REPLICATE SAMPLE
99111	40	SPIKE SAMPLE
99111	100	MORE THAN ONE TYPE OF QA SAMPLE
99111	110	CROSS-SECTION INFORMATION STORED
99111	200	OTHER
99112	SULFIDE, WATER, FILTERED, FIELD, MILLIGRAMS PER LITER	
99112	1	ROUTINE QC (NON-TOPICAL)
99112	10	TOPICAL QC FOR HIGH BIAS (CONTAMINATION)
99112	20	TOPICAL QC FOR LOW BIAS (RECOVERY)
99112	100	TOPICAL QC FOR VARIABILITY DUE TO FIELD EQUIPMENT
99112	110	TOPICAL QC FOR VARIABILITY DUE TO FIELD COLLECTION PROC.
99112	120	TOPICAL QC FOR VARIABILITY DUE TO FIELD PERSONNEL
99112	130	TOPICAL QC FOR VARIABILITY DUE TO FIELD PROCESSING PROC.
99112	140	TOPICAL QC FOR VARIABILITY DUE TO SHIP. & HANDLING PROC.
99112	200	TOPICAL QC FOR VARIABILITY DUE TO LABORATORY
99112	900	OTHER TOPICAL QC PURPOSE
99150	REFERENCE MATERIAL OR SPIKE, SOURCE NUMBER 2, CODE	
99150	10	NATIONAL WATER QUALITY LAB (USGS)
99150	20	U.S. ENVIRONMENTAL PROTECTION AGENCY

Parm Code	Fixed Values	Parameter Name
99150	30	STANDARD REFERENCE WATER SAMPLE (USGS)
99150	35	MIX OF STANDARD REFERENCE WATER SAMPL
99150	40	NIST (FORMERLY NBS)
99150	50	CANADIAN INLAND WATERS
99150	60	DISTRICT LAB
99150	61	SUBDISTRICT #1 LAB
99150	62	SUBDISTRICT #2 LAB
99150	63	SUBDISTRICT #3 LAB
99150	64	SUBDISTRICT #4 LAB
99150	70	NATURAL SAMPLE
99150	71	FIELD OFFICE #1 LAB
99150	72	FIELD OFFICE #2 LAB
99150	73	FIELD OFFICE #3 LAB
99150	74	FIELD OFFICE #4 LAB
99150	80	OCALA LAB (USGS)
99150	99	UNKNOWN
99150	100	CHEMICAL SUPPLIER
99150	110	BURDICK AND JACKSON
99150	120	J.T. BAKER
99150	200	OTHER

99151 REFERENCE MATERIAL OR SPIKE, SOURCE NUMBER 3, CODE

99151	10	NATIONAL WATER QUALITY LAB (USGS)
99151	20	U.S. ENVIRONMENTAL PROTECTION AGENCY
99151	30	STANDARD REFERENCE WATER SAMPLE (USGS)
99151	35	MIX OF STANDARD REFERENCE WATER SAMPL
99151	40	NIST (FORMERLY NBS)
99151	50	CANADIAN INLAND WATERS
99151	60	DISTRICT LAB
99151	61	SUBDISTRICT #1 LAB
99151	62	SUBDISTRICT #2 LAB
99151	63	SUBDISTRICT #3 LAB
99151	64	SUBDISTRICT #4 LAB
99151	70	NATURAL SAMPLE
99151	71	FIELD OFFICE #1 LAB
99151	72	FIELD OFFICE #2 LAB
99151	73	FIELD OFFICE #3 LAB
99151	74	FIELD OFFICE #4 LAB
99151	80	OCALA LAB (USGS)
99151	99	UNKNOWN
99151	100	CHEMICAL SUPPLIER
99151	110	BURDICK AND JACKSON
99151	120	J.T. BAKER
99151	200	OTHER

99152 REFERENCE MATERIAL OR SPIKE, SOURCE NUMBER 4, CODE

99152	10	NATIONAL WATER QUALITY LAB (USGS)
99152	20	U.S. ENVIRONMENTAL PROTECTION AGENCY
99152	30	STANDARD REFERENCE WATER SAMPLE (USGS)

Appendix B: Fixed Value Codes

<u>Parm</u>	<u>Fixed</u>		<u>Parameter Name</u>
<u>Code</u>	<u>Values</u>		
99152	35	MIX OF STANDARD REFERENCE WATER SAMPL	
99152	40	NIST (FORMERLY NBS)	
99152	50	CANADIAN INLAND WATERS	
99152	60	DISTRICT LAB	
99152	61	SUBDISTRICT #1 LAB	
99152	62	SUBDISTRICT #2 LAB	
99152	63	SUBDISTRICT #3 LAB	
99152	64	SUBDISTRICT #4 LAB	
99152	70	NATURAL SAMPLE	
99152	71	FIELD OFFICE #1 LAB	
99152	72	FIELD OFFICE #2 LAB	
99152	73	FIELD OFFICE #3 LAB	
99152	74	FIELD OFFICE #4 LAB	
99152	80	OCALA LAB (USGS)	
99152	99	UNKNOWN	
99152	100	CHEMICAL SUPPLIER	
99152	110	BURDICK AND JACKSON	
99152	120	J.T. BAKER	
99152	200	OTHER	
99153	REFERENCE MATERIAL OR SPIKE, SOURCE NUMBER 5, CODE		
99153	10	NATIONAL WATER QUALITY LAB (USGS)	
99153	20	U.S. ENVIRONMENTAL PROTECTION AGENCY	
99153	30	STANDARD REFERENCE WATER SAMPLE (USGS	
99153	35	MIX OF STANDARD REFERENCE WATER SAMPL	
99153	40	NIST (FORMERLY NBS)	
99153	50	CANADIAN INLAND WATERS	
99153	60	DISTRICT LAB	
99153	61	SUBDISTRICT #1 LAB	
99153	62	SUBDISTRICT #2 LAB	
99153	63	SUBDISTRICT #3 LAB	
99153	64	SUBDISTRICT #4 LAB	
99153	70	NATURAL SAMPLE	
99153	71	FIELD OFFICE #1 LAB	
99153	72	FIELD OFFICE #2 LAB	
99153	73	FIELD OFFICE #3 LAB	
99153	74	FIELD OFFICE #4 LAB	
99153	80	OCALA LAB (USGS)	
99153	99	UNKNOWN	
99153	100	CHEMICAL SUPPLIER	
99153	110	BURDICK AND JACKSON	
99153	120	J.T. BAKER	
99153	200	OTHER	
99154	REFERENCE MATERIAL OR SPIKE, SOURCE NUMBER 6, CODE		
99154	10	NATIONAL WATER QUALITY LAB (USGS)	
99154	20	U.S. ENVIRONMENTAL PROTECTION AGENCY	
99154	30	STANDARD REFERENCE WATER SAMPLE (USGS	
99154	35	MIX OF STANDARD REFERENCE WATER SAMPL	

Parm Code	Fixed Values	Parameter Name
99154	40	NIST (FORMERLY NBS)
99154	50	CANADIAN INLAND WATERS
99154	60	DISTRICT LAB
99154	61	SUBDISTRICT #1 LAB
99154	62	SUBDISTRICT #2 LAB
99154	63	SUBDISTRICT #3 LAB
99154	64	SUBDISTRICT #4 LAB
99154	70	NATURAL SAMPLE
99154	71	FIELD OFFICE #1 LAB
99154	72	FIELD OFFICE #2 LAB
99154	73	FIELD OFFICE #3 LAB
99154	74	FIELD OFFICE #4 LAB
99154	80	OCALA LAB (USGS)
99154	99	UNKNOWN
99154	100	CHEMICAL SUPPLIER
99154	110	BURDICK AND JACKSON
99154	120	J.T. BAKER
99154	200	OTHER

Appendix B: Fixed Value Codes

<u>Parm Code</u>	<u>Fixed Values</u>	<u>Parameter Name</u>
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Appendix C. Parameter Method Codes

Column A: Number of Significant Figures for values <.01
 Column B: Number of Significant Figures for values .01 to <.1
 Column C: Number of Significant Figures for values .1 to <1
 Column D: Number of Significant Figures for values 1 to <10
 Column E: Number of Significant Figures for values 10 to <100
 Column F: Number of Significant Figures for values 100 to <1000
 Column G: Number of Significant Figures for values >= to 1000

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
00000	A	ALK TOT FIELD CACO3	TOT ALK	0002		0000.000	0	0	1	2	2	3	3
00000	A	SP. CONDUCTANCE FLD	COND FLD	0021	I178077	0000.000	0	0	0	1	2	3	3
00000	A	PH FIELD	PH FIELD	0051	I158677	0000.000	0	0	1	2	3	0	0
00000	A	CAT.EX.CAP MEQ/100G	CA.E.CAP	0441		0000.000	0	0	1	2	3	3	3
00000	A	DIGESTION PROC BTM	HCL BTM	0647	I548585	0000.000	0	0	1	2	3	4	6
00000	A	ICP DOES THIS	SECTION6	0730		0000.000	0	1	2	3	4	5	6
00000	A	AMETRYNE, TOTAL	AMETRYNE	0752		0000.100	0	0	1	2	2	2	2
00000	A	DISULFOTON	DISULFOT	0820	O510483	0000.100	0	0	1	2	2	2	2
00000	A	PHOSDRIN, BTM. MAT.	PHOS BTM	0821	O510483	0000.100	0	0	1	2	2	2	2
00000	A	PHORATE BOTTOM	PHOR BTM	0822	O510483	0000.100	0	0	1	2	2	2	2
00000	A	CONTRACTS DOES THIS	CONT RAD	0945		0000.000	0	0	0	0	0	0	0
00000	B	HYDROXIDE FLD I. T.	OH F-IT	1168		0000.000	0	0	1	2	2	3	3
00000	B	BICARBONATE FLD I.T.	HCO3 FIT	1170		0000.000	0	0	1	2	2	3	3
00000	B	CARBONATE ALK FLD IT	CO3-ALK.	1171		0000.000	0	0	1	2	2	3	3
00000	A	PREP FOR BTM	PREP BTM	1184	P052085	0000.000	0	0	1	2	3	4	6
00000	A	C-13/C-12 ORG SOIL	C13/12OR	1205		0000.000	0	0	1	2	3	3	3
00000	A	BTM GCMS PROFILE	BTM GCMS	1237		0000.000	0	0	0	1	2	2	2
00000	C	ENDRIN ALDEHYDE	ENDRALDE	1339	O310483	0000.010	0	2	2	2	2	2	2
00000	C	ENDOSULFAN II	ENDOS II	1340	O310483	0000.010	0	2	2	2	2	2	2
00000	C	ENDOSULFAN SULFATE	ENDOFATE	1341	O310483	0000.010	0	2	2	2	2	2	2
00000	C	1,2-DIPHENYLHYDRAZIN	1,2-DPHZ	1342	O311583	0003.000	0	0	0	2	2	2	2
00000	C	ALDICARB NITRILE	A-NITRIL	1345	O310783	0000.100	0	0	1	2	2	2	2
00000	C	ALDICARB OXIME	A-OXIME	1346	O310783	0000.100	0	0	1	2	2	2	2
00000	C	1,2-DICHLOROPROPENE	1,2-DCPE	1350	O311583	0003.000	0	0	0	2	2	2	2
00000	A	GD EXT B	GEO-X-B	1451	G5EXT87	0000.500	0	0	1	2	2	2	2
00000	A	GD AAS HYD AS	GEO-H-AS	1452	G5AAH87	0000.100	0	0	1	2	2	2	2
00000	A	GD AAS HYD SB	GEO-H-SB	1454	G5AAH87	0000.100	0	0	1	2	2	2	2
00000	A	GD DNA TH	GEO-N-TH	1456	G5DNA87	0001.000	0	0	0	1	2	2	2
00000	A	GD DNA U	GEO-N-U	1457	G5DNA87	0000.100	0	0	1	2	2	2	2
00000	A	GD CARBON INORG	GEO-IC	1458	G5CAC87	0000.010	0	1	2	2	2	2	2
00000	A	GD CARBON ORG	GEO-OC	1459	G5CMB87	0000.010	0	1	2	2	2	2	2
00000	A	GD-CARBON-TOTAL	C-GD	1461		0000.010	0	1	2	2	2	2	2
00000	A	S-2,4-DB	S-2,4-DB	1486		0000.000	2	2	2	2	2	2	2
00000	A	S-ISODRIN	S-ISODRI	1487		0000.000	2	2	2	2	2	2	2
00000	A	S-TERBUTHYLAZINE	S-TERBUT	1489		0000.000	2	2	2	2	2	2	2
00000	A	S-D5-PHENOL	S-D5-PHE	1490		0000.000	2	2	2	2	2	2	2

Appendix C: Parameter Method Codes

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
00000	A	S-2,4-DIBROMOPHENOL	S-2,4-DI	1491		0000.000	2	2	2	2	2	2	2
00000	A	S-2,4,6-TRIBROMOPHEN	S-2,4,6T	1492		0000.000	2	2	2	2	2	2	2
00000	A	S-1,4-DIBROMOBENZENE	S-1,4-DI	1493		0000.000	2	2	2	2	2	2	2
00000	A	S-2,2-DIFLUOROBIPHEN	S-2,2-DI	1494		0000.000	2	2	2	2	2	2	2
00000	A	S-4,4-DIBROMOBIPHENY	S-4,4-DI	1495		0000.000	2	2	2	2	2	2	2
00000	A	S-BROMOCHLOROMETHANE	S-BROMOC	1496		0000.000	2	2	2	2	2	2	2
00000	A	S-1-BROMO-2-CHLOROET	S-1-BROM	1497		0000.000	2	2	2	2	2	2	2
00000	A	S-1,4-DICHLOROBUTANE	S-1,4-DI	1498		0000.000	2	2	2	2	2	2	2
00000	A	S-BROMOFLUOROBENZENE	S-BROMOF	1499		0000.000	2	2	2	2	2	2	2
00000	A	CNTRCTS DOES (GEOD)	CONTGEOD	1575		0000.000	0	0	0	0	0	0	0
00000	A	DEF DISSOLVED	DEF DISS	1579	O110483	0000.010	1	2	2	2	2	2	2
00000	A	PHORATE DISSOLVED	PHORTE D	1580	O110483	0000.010	1	2	2	2	2	2	2
00000	A	DISULFOTON DISSOLVED	DISULF D	1581	O110483	0000.010	1	2	2	2	2	2	2
00000	A	FONOFOSS DISSOLVED	FONOFS D	1582	O110483	0000.010	1	2	2	2	2	2	2
00000	A	DIGESTION EPA AS-SE	DIG.EAS	1586		0001.000	0	0	1	2	3	3	3
00000	A	1,4-DIBROMOBENZENE	BR2BENZ	1602		0000.000	0	0	1	2	2	2	2
00000	A	D-5-PHENOL	D5PHENOL	1603		0000.000	0	0	1	2	2	2	2
00000	A	2,4-DIBROMOPHENOL	BR2PHNOL	1604		0000.000	0	0	1	2	2	2	2
00000	A	2,2-DIFLUOROBIPHENY	F2BIPHEN	1605		0000.000	0	0	1	2	2	2	2
00000	A	246TRIBROMOPHENOL	BR3PHNOL	1606		0000.000	0	0	1	2	2	2	2
00000	A	4,4-DIBROMOPIPHENYL	BR2BIPH	1607		0000.000	0	0	1	2	2	2	2
00000	A	TERBUTHYLAZINE	C9H16CLN	1608	O310683	0000.010	3	3	3	3	3	3	3
00000	A	2,4 DB	C10H10CL	1609		0000.000	3	3	3	3	3	3	3
00000	A	ISOFENFOS	C15H24NO	1610	O310483	0000.001	3	3	3	3	3	3	3
00000	A	ISODRIN	C12H8C16	1611		0000.001	3	3	3	3	3	3	3
00000	A	DIGEST-CONT SW3020	DISW3020	1649	E302091	0001.000	0	0	1	2	3	4	5
00000	A	BULK MINEROLGY XRD	BULK_MIN	1699		0000.000	0	0	1	2	3	3	3
00000	A	SOLID SOL'N COMP	SOLIDSL	1700		0000.000	0	0	1	2	3	3	3
00000	A	CLAY MIN DETN	CLAY_MIN	1701		0000.000	0	0	1	2	3	3	3
00000	A	SR.BUTOXYCARBOXIMCBT	BUTX/CBT	1721	O310783	0000.500	3	3	3	3	3	3	3
00000	A	SR.DIOXACARB CBT	DIOX/CBT	1722	O310783	0000.500	3	3	3	3	3	3	3
00000	A	SR.BDMC CBT	BDMC/CBT	1723	O310783	0000.500	3	3	3	3	3	3	3
00000	A	SR.TERBUTHYLAZINEDIS	TERB DIS	1724		0000.050	3	3	3	3	3	3	3
00000	A	SR.ISOFENFOS BTM	ISOF BTM	1725	O510483	0000.100	3	3	3	3	3	3	3
00000	A	SR.2,4 DB BTM	24DB BTM	1726	O510583	0000.100	3	3	3	3	3	3	3
00000	A	2,4 DB TOTAL	24DB/TOT	1727	O310583	0000.010	3	3	3	3	3	3	3
00000	A	SR.ISODRIN DIS	ISOD DIS	1728	O110483	0000.010	3	3	3	3	3	3	3
00000	A	SR.ISODRIN LOWLEVEL	ISODLOWL	1729	O310483	0000.001	3	3	3	3	3	3	3
00000	A	SR.ISODRIN PCB DIS	ISOD DIS	1730	O110483	0000.100	3	3	3	3	3	3	3
00000	A	SR.ISODRIN PCB TOTAL	ISODTOTP	1731	O310483	0000.100	3	3	3	3	3	3	3
00000	A	SR.2,4 DB CPH DIS	24DB DIS	1732	O110583	0000.010	3	3	3	3	3	3	3
00000	A	SR.ISOFENFOS DIS	ISOF DIS	1733	O110483	0000.010	3	3	3	3	3	3	3
00000	A	SR.ISODRIN 608METHOD	ISOD 608	1734		0000.001	3	3	3	3	3	3	3
00000	A	SAMPLEVOLUME SCH1304	SV-S1304	1800	O310583	0001.000	0	0	0	2	3	3	3
00000	A	SAMPLEVOLUME SCH1364	SV-S1364	1801		0001.000	0	0	0	2	3	3	3
00000	A	SAMPLEVOLUME SCH1361	SV-S1361	1802		0001.000	0	0	0	2	3	3	3
00000	A	SAMPLEVOLUME SCH1301	SV-S1301	1816	O110583	0001.000	0	0	0	2	3	3	3
00000	A	2-NITROTOLUENE	EXPLOSVE	1817		0000.001	1	2	2	2	2	2	3

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
00000	A	EPA_TAG_NO_FA_1	EPATGFA1	1820		0000.000	0	0	0	0	0	0	0
00000	A	EPA_TAG_NO_FA_2	EPATGFA2	1821		0000.000	0	0	0	0	0	0	0
00000	A	EPA_TAG_NO_FU_1	EPATGFU1	1822		0000.000	0	0	0	0	0	0	0
00000	A	EPA_TAG_NO_FU_2	EPATGFU2	1823		0000.000	0	0	0	0	0	0	0
00000	A	EPA_TAG_NO_FAB	EPATGFAB	1824		0000.000	0	0	0	0	0	0	0
00000	A	EPA_TAG_NO_FAM	EPATGFAM	1825		0000.000	0	0	0	0	0	0	0
00000	A	EPA_TAG_NO_RA_1	EPATGRA1	1826		0000.000	0	0	0	0	0	0	0
00000	A	EPA_TAG_NO_RA_2	EPATGRA2	1827		0000.000	0	0	0	0	0	0	0
00000	A	EPA_TAG_NO_RU_1	EPATGRU1	1828		0000.000	0	0	0	0	0	0	0
00000	A	EPA_TAG_NO_RU_2	EPATGRU2	1829		0000.000	0	0	0	0	0	0	0
00000	A	EPA_TAG_NO_RAH	EPATGRAH	1830		0000.000	0	0	0	0	0	0	0
00000	A	EPA_TAG_NO_RAM	EPATGRAM	1831		0000.000	0	0	0	0	0	0	0
00000	A	GD SAMPLE PREP	SAMPPREP	1860		0000.000	0	0	0	1	2	2	2
00000	A	SET # SCHEDULE 80	SET#0080	1900		0000.000	1	2	2	2	2	2	7
00000	A	SET # SCHEDULE 1305	SET#1305	1901		0000.000	1	2	2	2	2	2	7
00000	A	SET # SCHEDULE 1320	SET#1320	1902		0000.000	1	2	2	2	2	2	7
00000	A	SET # SCHEDULE 1325	SET#1325	1903		0000.000	1	2	2	2	2	2	7
00000	A	SET # SCHEDULE 1384	SET#1384	1905		0000.000	1	2	2	2	2	2	7
00000	A	SET # SCHEDULE 1386	SET#1386	1906		0000.000	1	2	2	2	2	2	7
00000	A	SET # LABCODE 113	SET# 113	1907		0000.000	1	2	2	2	2	2	7
00000	A	SET # LABCODE 1614	SET#1614	1908		0000.000	1	2	2	2	2	2	7
00000	A	SET # LABCODE 306	SET# 306	1909		0000.000	1	2	2	2	2	2	7
00000	A	SET # LABCODE 114	SET# 114	1910		0000.000	1	2	2	2	2	2	7
00000	A	SET # LABCODE 19	SET# 19	1911		0000.000	1	2	2	2	2	2	7
00000	A	SET # LABCODE 305	SET# 305	1912		0000.000	1	2	2	2	2	2	7
00000	A	SET # LABCODE 133	SET# 133	1913		0000.000	1	2	2	2	2	2	7
00000	A	SET # LABCODE 503	SET# 503	1914		0000.000	1	2	2	2	2	2	7
00000	A	SET # LABCODE 531	SET# 531	1915		0000.000	1	2	2	2	2	2	7
00000	A	SET # LABCODE 127	SET# 127	1916		0000.000	1	2	2	2	2	2	7
00000	A	SET # LABCODE 52	SET# 52	1917		0000.000	1	2	2	2	2	2	7
00000	A	SET # LABCODE 96	SET# 96	1918		0000.000	1	2	2	2	2	2	7
00000	A	SET # LABCODE 138	SET# 138	1919		0000.000	1	2	2	2	2	2	7
00000	A	SET # LABCODE 8401	SET#8401	1920		0000.000	1	2	2	2	2	2	7
00000	A	N-15/N-14(NO3&NH4)DI	N15/14 T	1921		0000.000	0	2	2	3	3	3	3
00000	A	2 4-DB SUR 1304	24DB1304	1922		0000.000	3	3	2	2	2	3	1
00000	A	2 4-DB SUR 1301	24DB1301	1923		0000.000	3	3	2	2	2	3	1
00000	A	TERBUTHY SUR 1379	TERB1379	1924		0000.000	3	3	2	2	2	3	1
00000	A	ISOFEN SUR 1317	ISOF1317	1925		0000.000	3	3	2	2	2	3	1
00000	A	ISOFEN SUR 1316	ISOF1316	1926		0000.000	3	3	2	2	2	3	1
00000	A	ISODRIN SUR 1321	ISOD1321	1927		0000.000	3	3	2	2	2	3	1
00000	A	ISODRIN SUR 1398	ISOD1398	1928		0000.000	3	3	2	2	2	3	1
00000	A	ISODRIN SUR 1364	ISOD1364	1929		0000.000	3	3	2	2	2	3	1
00000	A	ISODRIN SUR 1361	ISOD1361	1930		0000.000	3	3	2	2	2	3	1
00000	A	ISODRIN SUR 1608	ISOD1608	1931		0000.000	3	3	2	2	2	3	1
00000	A	SET # SCHEDULE 1401	SET#1401	1932		0000.000	1	2	2	2	2	2	7
00000	A	SET # SCHEDULE 1378	SET#1378	1933		0000.000	1	2	2	2	2	2	7
00000	A	SET # VOA SCHEDULES	SET# VOA	1934		0000.000	1	2	2	2	2	2	7
00000	A	SET # SCHEDULE 1390	SET#1390	1935		0000.000	1	2	2	2	2	2	7

Appendix C: Parameter Method Codes

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
00000	A	SET # SCHEDULE 1307	SET#1307	1938		0000.000	1	2	2	2	2	2	7
00000	A	SET # SCHEDULE 1391	SET#1391	1939		0000.000	1	2	2	2	2	2	7
00000	A	SET # SCHEDULE 1392	SET#1392	1940		0000.000	1	2	2	2	2	2	7
00000	A	SAMPLE WEIGHT 1305	SW1305	1941		0000.000	0	0	0	2	3	4	5
00000	A	SAMPLE WEIGHT 1325	SW1325	1942		0000.000	0	0	0	2	3	4	5
00000	A	SAMPLE WEIGHT 1320	SW1320	1943		0000.000	0	0	0	2	3	4	5
00000	A	SAMPLE WEIGHT 1317	SW1317	1944		0000.000	0	0	0	2	3	4	5
00000	A	SAMPLE VOLUME 0080	SV0080	1945		0000.000	0	0	0	2	3	4	5
00000	A	SAMPLE WEIGHT 1384	SW1384	1946		0000.000	3	3	3	3	0	0	0
00000	A	SURBUTXYCARBOXIM1359	BUTX1359	1955		0000.000	0	0	1	2	2	2	0
00000	A	SUR-DIOXACARB-1359	DIOX1359	1956		0000.000	0	0	1	2	2	2	0
00000	A	SUR-BDMC-1359	BDMC1359	1957		0000.000	0	0	1	2	2	2	0
00000	A	SET NUMBER LC1834	SET#1834	1958		0000.000	1	2	2	2	2	2	7
00000	A	SET # SCHEDULE 1508	SET#1508	1959		0000.000	1	2	2	2	2	2	7
00000	A	SET # SCHEDULE 1377	SET#1377	1960		0000.000	1	2	2	2	2	2	7
00000	A	SET # SCHEDULE 1394	SET#1394	1996		0000.000	1	2	2	2	2	2	7
00000	A	SAMPLE WEIGHT 1394	SAMPWGT	1997		0000.000	0	0	0	2	3	3	3
00000	A	ICP SETUP	ICPSETUP	2002		0000.000	0	0	0	0	0	0	0
00000	A	GD JOB NUMBER	GDJOB NO	2003		0000.000	0	0	0	0	0	0	0
00000	A	SAMPLEVOLUME SCH1306	SV-S1306	2008		0000.000	0	0	1	2	3	4	0
00000	A	SET # SCHEDULE 1306	SET#1306	2009		0000.000	1	2	2	2	2	2	7
00000	A	TL-SUSP SED-UGG-GD	TL-SUSED	2056		0000.100	0	1	2	3	3	3	3
00000	A	B-HZOEXT-GD-UGG	B-BSEDGD	2059		0000.400	0	0	0	2	2	2	2
00000	A	SB-DIGESTION-EPA3113	SBDIGEPA	2060		0001.000	0	0	0	1	1	1	1
00000	A	ALUMINUM ICPBM<2MM	ALB <2MM	2062	GE01090	0000.005	1	2	2	2	2	2	2
00000	A	CALCIUM ICP BM<2MM	CAB <2MM	2063	GE01090	0000.005	1	2	2	2	2	2	2
00000	A	IRON ICP BM<2MMFS	FEB <2MM	2064	GE01090	0000.005	1	2	2	2	2	2	2
00000	A	POTASSIM ICPBM<2MM	K-B <2MM	2065	GE01090	0000.050	0	1	2	2	2	2	2
00000	A	MAGNESUM ICPBM<2MM	MGB <2MM	2066	GE01090	0000.005	1	2	2	2	2	2	2
00000	A	SODIUM ICP BM<2MM	NAB <2MM	2067	GE01090	0000.005	1	2	2	2	2	2	2
00000	A	PHOSPHS ICP BM<2MM	P-B <2MM	2068	GE01090	0000.005	1	2	2	2	2	2	2
00000	A	TITANIUM ICPBM<2MM	TIB <2MM	2069	GE01090	0000.005	1	2	2	2	2	2	2
00000	A	GOLD ICP ICPBM<2MM	AUB <2MM	2070	GE01090	0008.000	0	0	0	1	2	2	2
00000	A	BARIUM ICP BM<2MM	BAB <2MM	2071	GE01090	0001.000	0	0	0	1	2	2	2
00000	A	BERYLLIUMICPBM<2MM	BEB <2MM	2072	GE01090	0001.000	0	0	0	1	2	2	2
00000	A	BISMUTH ICP BM<2MM	BIB <2MM	2073	GE01090	0010.000	0	0	0	0	1	2	2
00000	A	CERIUM ICP BM<2MM	CEB <2MM	2074	GE01090	0004.000	0	0	0	1	2	2	2
00000	A	COBALT ICP BM<2MM	COB <2MM	2075	GE01090	0001.000	0	0	0	1	2	2	2
00000	A	CHROMIUM ICPBM<2MM	CRB <2MM	2076	GE01090	0001.000	0	0	0	1	2	2	2
00000	A	COPPER ICP BM<2MM	CUB <2MM	2077	GE01090	0001.000	0	0	0	1	2	2	2
00000	A	EUROPIUM ICPBM<2MM	EUB <2MM	2078	GE01090	0002.000	0	0	0	1	2	2	2
00000	A	GALLIUM ICP BM<2MM	GAB <2MM	2079	GE01090	0004.000	0	0	0	1	2	2	2
00000	A	HOLMIU ICP BM<2MM	HOB <2MM	2080	GE01090	0004.000	0	0	0	1	2	2	2
00000	A	LANTHNM ICP BM<2MM	LAB <2MM	2081	GE01090	0002.000	0	0	0	1	2	2	2
00000	A	LITHIUM ICP BM<2MM	LIB <2MM	2082	GE01090	0002.000	0	0	0	1	1	1	2
00000	A	MANGNSE ICP BM<2MM	MNB <2MM	2083	GE01090	0004.000	0	0	0	1	2	2	2
00000	A	MOLYBDM ICP BM<2MM	MOB <2MM	2084	GE01090	0002.000	0	0	0	1	2	2	2
00000	A	NOBIUM ICP BM<2MM	NBB <2MM	2085	GE01090	0004.000	0	0	0	1	2	2	2

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
00000	A	NEODYMM ICP BM<2MM	NDB <2MM	2086	GE01090	0004.000	0	0	0	1	2	2	2
00000	A	NICKEL ICP BM<2MM	NIB <2MM	2087	GE01090	0002.000	0	0	0	1	2	2	2
00000	A	LEAD ICP BM<2MM	PBB <2MM	2088	GE01090	0004.000	0	0	0	1	2	2	2
00000	A	SCANDIM ICP BM<2MM	SCB <2MM	2089	GE01090	0002.000	0	0	0	1	2	2	2
00000	A	TIN ICP BM T<2MMFS	SNB <2MM	2090	GE01090	0010.000	0	0	0	0	1	2	2
00000	A	STRONTM ICP BM<2MM	SRB <2MM	2091	GE01090	0002.000	0	0	0	1	2	2	2
00000	A	TANTALUM ICPBM<2MM	TAB <2MM	2092	GE01090	0040.000	0	0	0	0	1	2	2
00000	A	VANADIUM ICPBM<2MM	V-B <2MM	2093	GE01090	0002.000	0	0	0	1	2	2	2
00000	A	YTTRIUM ICP BM<2MM	Y-B <2MM	2094	GE01090	0002.000	0	0	0	1	2	2	2
00000	A	YTTERBM ICP BM<2MM	YBB <2MM	2095	GE01090	0001.000	0	0	0	1	2	2	2
00000	A	ZINC ICP T BM<2MMFS	ZNB <2MM	2096	GE01090	0004.000	0	0	0	1	2	2	2
00000	B	SILVER GF BM<2MM	AGB <2MM	2097	GD	0000.100	0	0	1	2	2	2	2
00000	B	CADIMUM GF BM<2MM	CDB <2MM	2098	GD	0000.100	0	0	1	2	2	2	2
00000	C	MERCURY CV BM<2MM	HGB <2MM	2099	GD	0000.020	0	1	2	3	3	3	3
00000	D	ARSENIC HA BM<2MM	ASB <2MM	2100	GA02090	0000.100	0	0	1	2	2	2	2
00000	D	ANTIMONY HA BM<2MM	SBB <2MM	2101	GD	0000.100	0	0	1	1	2	2	2
00000	D	SELENIUM HA BM<2MM	SEB <2MM	2102	GA01090	0000.100	0	0	1	2	2	2	2
00000	E	URANIUM NA BM<2MM	U-B <2MM	2103	GD	0000.050	0	1	2	2	2	2	2
00000	E	THORIUM NA BM<2MM	THO <2MM	2104	GD	0001.000	0	0	1	2	2	2	2
00000	F	SULFUR IR BM<2MM	S-B <2MM	2105	GN01090	0000.050	0	1	2	3	3	3	3
00000	F	CARBON TOT BM<2MM	CTB <2MM	2106	GN01090	0000.010	0	1	2	3	3	3	3
00000	G	CARBONATE C BM<2MM	C03 <2MM	2107	GC01090	0000.010	0	1	2	3	3	3	3
00000	G	CARBON ORG BM<2MM	CTO<2MM	2108	GC01090	0000.010	0	1	2	3	3	3	3
00000	A	TRITIUM HE INGROWTH	H3 HE	2112		0000.000	3	3	3	3	3	3	3
00000	A	TRITIUM HE % ERR	H3HE %ER	2113		0000.000	3	3	3	3	3	3	3
00000	A	CHAIN OF CUSTODY	COC	2114		0000.000	0	0	0	0	0	0	0
00000	A	NZ LAB FEE	NZFEE	2115		0000.000	0	1	2	3	3	3	3
00000	A	OIL & GREASE SET#	O&G_SET#	2116		0000.000	0	0	0	1	2	2	7
00000	A	HELIUM DIS CC@STP/GM	HE DIS	2120		0000.000	3	3	3	3	3	3	3
00000	A	HELIUM DIS % ERR	HEDIS%ER	2121		0000.000	3	3	3	3	3	3	3
00000	A	NEON DIS CC@STP/GM	NE DIS	2122		0000.000	3	3	3	3	3	3	3
00000	A	NEON DIS % ERR	NEDIS%ER	2123		0000.000	3	3	3	3	3	3	3
00000	A	HELUM/NEON RATIO	HE:NE	2124		0000.000	3	3	3	3	3	3	3
00000	A	TOT PETROLEUM HYDRO	TPH	2126		0002.000	0	0	0	1	2	2	2
00000	A	TPH SET NUMBER	TPH SET#	2127		0000.00	1	2	2	2	2	2	7
00000	A	SAMPVOLMLSC2201	SVOL2201	2205		0000.100	0	0	1	2	3	4	5
00000	A	SETNUMBERSC2201	SET#2201	2206		0000.001	1	2	3	4	5	6	7
00000	A	SURR90RECSC2201	SURR2201	2207		0000.010	0	1	2	3	4	5	6
00000	A	SAMP VOL ML SC2202	SVO12202	2212		0000.100	0	0	1	2	3	4	5
00000	A	SET NUMBER SC2202	SET	2213		0000.001	1	2	3	4	5	6	7
00000	A	SURR %REC SC2202	SURR2202	2214		0000.010	0	1	2	3	4	5	6
00000	A	DIMENTOL % SURR EPA	DMTSUEPA	2219		0000.010	0	1	2	3	4	5	6
00000	A	TRIPHENYL %SURR EPA	TPPSUEPA	2220		0000.010	0	1	2	3	4	5	6
00000	A	D12 PERYL %SURR EPA	DI2PREPA	2221		0000.010	0	1	2	3	4	5	6
00000	A	SAMP VOL ML SC2203	SVOL2203	2222		0000.010	0	0	1	2	3	4	5
00000	A	SET NUMBER SC 2203	SET#2203	2223		0000.001	1	2	3	4	5	6	7
00000	A	SET NUMBER SC2204	SET#2204	2227		0000.001	1	2	3	4	5	6	7
00000	A	SET NUMBER SC2205	SET#2205	2230		0000.001	1	2	3	4	5	6	7

Appendix C: Parameter Method Codes

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
00000	A	SAMPVOL ML SC2206	SVOL2206	2258		0000.100	0	0	1	2	3	4	5
00000	A	SET NUMBER SC2206	SET#2206	2259		0000.100	0	0	1	2	3	4	5
00000	A	SAMP VOL ML SC2204	SVOL2207	2264		00119.70	0	0	1	2	3	4	5
00000	A	SET NUMBER SC2207	SET#2207	2265		0000.001	1	2	3	4	5	6	7
00000	A	SAMPVOL ML SC2208	SVOL2208	2275		0000.010	0	0	1	2	3	4	5
00000	A	SETNUMBER SC2208	SET#2208	2276		0000.001	1	2	3	4	5	6	7
00000	A	ISODRIN %SURR EPA508	ISOSUEPA	2277		0000.010	0	1	2	3	4	5	6
00000	A	ICP SETUP	ICPSETUP	2343		0000.000	0	0	0	0	0	0	0
00000	A	MOISTURE % BTM NQ	N2O % BN	5049		0000.100	0	0	1	2	2	2	2
00000	A	BASIC ORG SED PREP	BPRP2500	5062		0000.000	0	0	0	0	0	0	0
00000	A	OC ORG SED CLEANUP	OCSEDCLN	5063		0000.000	0	0	0	0	0	0	0
00000	A	SAMPLE WEIGHT SC2502	SW-S2502	5291		0000.000	0	1	2	3	3	4	7
00000	A	DIGESTION INORG TIS	DIG TIS	6048		0000.000	0	0	0	1	2	3	0
00000	A	8001 LAB FILTRATION	FILT8001	8008		0000.000	0	0	0	0	0	0	0
00000	A	FID/MS-INORG	FID/MS	8013		0000.000	0	0	0	0	0	0	0
00000	A	PORTLAND OR 1379+	OR1379+	8015		0000.000	0	0	0	0	0	0	0
00000	A	RMA_TISSUES	RMA_TISS	8016		0000.000	0	0	0	0	0	0	0
00000	A	YUCCA MTN GREASE ANL	YUCCGCMS	8017		0000.000	0	0	0	0	0	0	0
00000	A	MIDWEST AIR SAMPLES	MIDWEST	8018		0000.000	0	0	0	0	0	0	0
00000	A	MTN CREEK LAKE 06/95	MTNCRLA	8019		0005.000	0	0	0	0	0	0	0
00000	A	THOMPSON0995	THOMPSON	8020		0000.000	0	0	0	0	0	0	0
00000	A	RMA1195	RMA1195	8021		0000.000	0	0	0	0	0	0	0
00000	A	TX.VANMETRE.PAH	TX.PAH	8022		0000.000	0	0	0	0	0	0	0
00000	A	AK.MCCARTHY.FUEL	AK.FUEL	8023		0000.000	0	0	0	0	0	0	0
00000	A	FL2001	FL2001	8024		0000.000	0	0	0	0	0	0	0
00000	A	SCH1381_KENTUCKY	KY_1381	8025		0000.000							
00000	A	SPMD AUSTIN	SPMD	8105		0000.000	0	0	0	0	0	0	0
00000	A	VOCSED-AUSTIN TX	VOCAUSTR	8111		0030.000	0	0	0	0	0	0	0
00000	A	VOC SED-PROTLAND OR	VOCPORT	8112		0300.000	0	0	0	0	0	0	0
00000	A	MTBE BTEX LAKWOODCO	MTBELKWD	8113		0010.000	0	0	0	0	0	0	0
00000	A	CUSTOM FOR ZOGORSKI	SIM1307	8114		0000.000	0	0	0	0	0	0	0
00000	A	BEVANS 06/95	SPMD	8115		0000.000	0	0	0	0	0	0	0
00000	A	MTN CREEK LAKE 06/95	MTNCRLA	8116		0000.000	0	0	0	0	0	0	0
00000	A	CO.BRUCE.7/19/95	1307+	8117		0000.000	0	0	0	0	0	0	0
00000	A	SD.ZOGORSKI.060396	SD.CHLOR	8118		0000.000	0	0	0	0	0	0	0
00000	A	NITRO ARO. IN SOIL	NOINSOIL	8207		0000.000	0	0	0	0	0	0	0
00000	A	C1398-1L-FILT-OR	C1398-OR	8307		0000.000	0	0	0	0	0	0	0
00000	A	C1322-10L-SUSP-OR	C1322-OR	8308		0000.000	0	0	0	0	0	0	0
00000	A	C1319-1L-FILT-OR	C1319-OR	8317		0000.000	0	0	0	0	0	0	0
00000	A	C1317-10L-SUSP-OR	C1317-OR	8318		0000.000	0	0	0	0	0	0	0
00000	A	GC ONLY FOR 1389	GC-1389	8337		0000.000	0	0	0	0	0	0	0
00000	A	FILTER_BAKED_QA	FILT_QA	8360		0000.000	0	0	0	0	0	0	0
00000	A	LOW LVL PCB WAT NY	CUST.PCB	8364		0000.000	0	0	0	0	0	0	0
00000	A	COMP FILLET TAC WA	COMP_WA	8365		0000.000	0	0	0	0	0	0	0
00000	A	C1325 JOE D. CA	1325-CA	8367		0000.000	0	0	0	0	0	0	0
00000	A	C1398_DISS_OR	1398DISS	8369		0000.000	0	0	0	0	0	0	0
00000	A	C1325SOXLETORRINELLA	C1325_OR	8370		0000.000	0	0	0	0	0	0	0
00000	A	NITROAROMATICS_ECD	NITRO_GC	8371		0000.000	0	0	0	0	0	0	0

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
00000	A	TX.MORING071295	MORING	8372		0000.000	0	0	0	0	0	0	0
00000	A	EYCHANER0396	EYCHANER	8373		0000.000	0	0	0	0	0	0	0
00000	A	TX.VANMETRE.PCB	TX.PCB	8374		0000.000	0	0	0	0	0	0	0
00000	A	TX.VANMETRE.OCS	TX.OCS	8375		0000.000	0	0	0	0	0	0	0
00000	A	TX.VANMETREPCBONLY	TX.PCBCV	8376		0000.000	0	0	0	0	0	0	0
00000	A	TX.VANMETRE.PCBOC	TX.PCBOC	8377		0000.000	0	0	0	0	0	0	0
00000	A	GDGRNDICP40SISULFURS	GDCARCK1	8403		0000.000	0	0	0	0	0	0	0
00000	A	GDICP40SISULFURS	GDCARCK2	8404		0000.000	0	0	0	0	0	0	0
00000	A	GDICPEDYRF5MAJ12SIS	GDCARCK2	8405		0000.000	0	0	0	0	0	0	0
00000	A	TPH-SEDIMENT TN	TPH-TN	8406		0000.000	0	0	0	0	0	0	0
00000	A	ARIZONA CUSTOM	ARIZONA	8407		0000.000	0	0	0	0	0	0	0
00000	A	ARIZONA CUSTOM-SOC	ARIZONA	8408		0000.000	0	0	0	0	0	0	0
00000	A	ARIZONA CUSTOM-TKN	ARIZONA	8409		0000.000	0	0	0	0	0	0	0
00000	A	ARIZONA CUSTOM-TP	ARIZONA	8410		0000.000	0	0	0	0	0	0	0
00000	A	THOMPSON0995	THOMPSON	8411		0000.100	0	0	0	0	0	0	0
00000	A	THOMPSON0995	THOMPSON	8412		0000.020	0	0	0	0	0	0	0
00000	A	THOMPSON0995	THOMPSON	8501		0000.100	0	0	0	0	0	0	0
00000	A	THOMPSON0995	THOMPSON	8502		0000.100	0	0	0	0	0	0	0
00000	A	THOMPSON0995	THOMPSON	8503		0001.000	0	0	0	0	0	0	0
00000	A	VOC SCREEN	VOCSCRN	9089		0001.000	0	0	0	1	0	0	0
00000	A	NAWQA CUSTOM VOC	NAWQAVOC	9090		0000.000	0	0	0	0	0	0	0
00000	A	NAWQA VOC NO NONTRGT	NAWQAVOC	9091		0000.000	0	0	0	0	0	0	0
00076	A	TURBIDITY (NTU)	TURB	0050	I386085	0000.100	0	0	1	2	2	2	2
00080	A	COLOR PT-CO	COLOR	0020	I125085	0001.000	0	0	0	1	2	2	2
00339	A	COD, BTM MATERIAL	COD BTM	0532	I556085	0100.000	0	0	0	1	2	2	2
00340	B	COD	COD	0076	I356185	0010.000	0	0	0	0	2	2	2
00403	A	PH (LABORATORY)	PH LAB	0068	I258785	0000.100	0	0	1	2	3	0	0
00403	B	PH LOW IONIC	PH LL	1268	I158890	0000.100	1	1	1	3	3	1	1
00495	B	MOISTURE CONTENT WT.	MC-WT %	0904	P059085	0000.100	0	2	2	3	3	3	3
00496	A	SOLIDS, VOL, BTM MAT	RESLOIBM	0516	I575385	0001.000	0	0	0	1	2	3	3
00500	A	ROE AT 105 DEG C TOT	RESTO105	0165	I375085	0001.000	0	0	0	1	2	3	3
00505	A	RESIDUE, VOLATILE, T	RESLOITS	0085	I375385	0001.000	0	0	0	1	2	3	3
00515	B	ROE AT 105 DEG C DIS	RESTO105	0159	I174985	0001.000	0	0	0	1	2	3	3
00520	A	RESIDUE VOL DISS	RESVOL D	0229	I175385	0001.000	0	0	0	1	2	3	3
00530	B	ROE AT 105 DEG C SUS	RESTOTNO	0169	I376585	0001.000	0	0	0	1	2	3	3
00535	A	RESIDUE VOLAT. SUSP.	RESVOLNO	0049	I376785	0001.000	0	0	0	1	2	3	3
00556	B	OIL&GREASE EPA1664	OILGREAS	2125		0001.000	0	0	0	1	2	2	2
00557	A	OIL AND GREASE, BTM.	OIL&GR.B	0531	O510883	1000.000	0	0	0	1	2	2	2
00572	A	BIOMAS(PERI)ASH WT.	BMS(PE)A	0611	B352079	0000.001	3	3	3	4	5	5	5
00573	A	BIOMAS(PERI)DRY WT.	BMS(PE)D	0603	B352079	0000.001	3	3	3	4	5	5	5
00602	C	NITROGEN-ANTEK-FCC	N-ANTFCC	1989	I251190	0000.100	0	0	1	1	2	2	2
00608	F	N, AMMONIA-FCC	NH3-FCC	1976	I252290	0000.015	1	1	2	2	2	2	2
00608	H	N, AMMONIA LL-FCC	NH3LLFCC	1980	I252589	0000.002	1	2	3	2	2	2	2
00608	G	NITROGEN NH3 - FCA	NH3-FCA	1991	I252290	0000.015	1	1	2	2	2	2	2
00611	A	N NH3-N BTM	NH3-N BM	0524	I652290	0000.200	0	0	1	2	2	2	2
00613	F	N, NITRITE FCC	NO2-FCC	1973	I254090	0000.010	0	1	2	2	2	2	2
00613	H	N, NITRITE, LL, FCC	NO2LLFCC	1977	I254289	0000.001	2	3	2	2	2	2	2
00615	E	NO2 DW	NO2DW	2347		0000.020	0	2	2	2	2	2	2

Appendix C: Parameter Method Codes

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
00618	B	NITR DIS NO3 AS N	NO3 AS N	0167	I153178	0000.000	2	2	2	2	2	2	2
00618	D	N,NITRATE-IC-LOW ION	NO3-ICLL	1261	I205885	0000.010	0	1	2	2	2	2	2
00623	D	N,ORGANIC+AMMONIAFCC	KJP-FCC	1985	I261091	0000.200	0	0	1	2	2	2	2
00623	E	NITROGEN,ORG+NH3-FCA	KJD-FCA	1994	I261091	0000.200	0	1	2	2	2	2	2
00625	D	N,ORGANIC+AMMONIARCC	KJD-RCC	1986	I451591	0000.200	0	0	1	2	2	2	2
00625	E	NITROGEN,ORG+NH3-RCA	KJD-RCA	1995	I451591	0000.200	0	0	1	2	2	2	2
00626	C	N NH3+ORG. N-N BTM	KJD-N BM	1211	I555391	0020.000	0	0	0	0	1	2	2
00630	D	NO2 + NO3 DW	2+3DW	2348		0000.100	0	2	2	2	2	2	2
00631	E	N NO2+NO3-FCC	NO2+3FCC	1975	I254590	0000.050	0	1	2	2	2	2	2
00631	G	N,NO2+NO3-LL FCC	NO23LFCC	1979	I254691	0000.005	3	2	2	2	2	2	2
00631	F	NITROGEN NO2+NO3-FCA	NO2+3FCA	1990	I254590	0000.050	1	2	2	2	2	2	2
00633	A	NITR,NO2+NO3 AS N,BT	NO2NO3BM	0513	I654590	0002.000	0	0	0	1	2	2	2
00665	F	PHOSPHORUS-P LL RCC	P-LL-RCC	1982		0000.001	2	3	2	2	2	2	2
00665	D	P, PHOSPHORUS-RCC	P-RCC	1984	I461091	0000.010	0	1	2	2	2	2	2
00665	E	PHOSPHORUS RCA	P-RCA	1993	I461091	0000.010	0	1	2	2	2	2	2
00666	F	PHOSPHORUS,LL,FCC	P-LL FCC	1981	I260790	0000.001	2	3	2	2	2	2	2
00666	D	P, PHOSPHORUS FCC	P-FCC	1983	I261099	0000.010	0	1	2	2	2	2	2
00666	E	PHOSPHORUS FCA	P-FCA	1992	I261091	0000.010	0	1	2	2	2	2	2
00668	B	PHOSPHORUS AS P, BTM	PHOS BM	0515	I660088	0040.000	0	0	0	1	2	2	2
00671	G	P,ORTHO-PO4-IC-L ION	PO4PICLL	1262	I205885	0000.010	0	1	2	2	2	2	2
00671	H	P ORTHO-PHOSPHATEFCC	PO4-FCC	1974	I260190	0000.010	0	1	2	2	2	2	2
00671	I	P,O-PHOSPHATE LL FCC	PO4LLFCC	1978	I260689	0000.001	2	3	2	2	2	2	2
00677	B	P,ORTHO+HYDRO FCC	POHYRFCC	1988	I260285	0000.010	0	1	2	2	2	2	2
00678	B	P,ORTHO+HYDRO RCC	POHYDRCC	1987	I460285	0000.010	0	1	2	2	2	2	2
00680	A	CARBON, ORGANIC, TOT	C TOT OR	0114	O310083	0000.100	0	0	1	2	2	2	2
00681	A	CARBON, ORGANIC, DIS	C DIS OR	0113	O000278	0000.100	0	0	1	2	2	2	2
00681	B	CARBON ORG FILT .7GF	DOC.7	1614		0000.100	0	0	1	2	2	2	2
00685	A	CARBON, INORG. TOTAL	C TOT IN	0019	O000478	0000.100	0	0	1	2	2	2	2
00686	C	CARBON IN BTM. MAT.	C.I.B.M.	0503	O510183	0000.100	0	0	1	2	2	2	2
00686	D	CARBON ING BTM NAWQA	CIBTMNQA	1833	O510183	0000.100	1	1	1	2	2	3	3
00689	A	CARBON, ORGANIC, SUS	C.ORG S	0305	O710083	0000.100	0	0	1	2	2	2	2
00691	A	CARBON, INORGANIC, D	C.INORG.	0306	O000478	0000.100	0	0	1	2	2	3	3
00693	A	CARBON TOT BTM. MAT.	C.T.B.M.	0133	O510183	0000.100	0	0	1	2	2	2	2
00720	A	CYANIDE, TOTAL	CN	0023	I430285	0000.010	0	1	2	2	2	2	2
00721	B	CYANIDE, BTM. MAT.	CN B.M.	1235	I630285	0000.500	0	0	1	2	2	2	2
00723	A	CYANIDE, DISSOLVED	CN- DISS	0880	I232085	0000.010	0	1	2	2	2	2	2
00745	A	SULFIDE, TOTAL	S	0089	I384085	0000.500	0	0	1	2	2	2	2
00915	C	CALCIUM, DISSOLV.	CA DISS	0012	I115285	0000.100	0	0	1	2	2	2	2
00915	D	CALCIUM, DISSOLVED	CA-ICP	0659	I147287	0000.020	0	1	2	2	2	2	2
00915	B	CALCIUM, DIS. LOWLVL	CA DISLL	0831	I115285	0000.010	0	1	2	2	2	2	2
00915	E	CA ICP LL	CA ICPLL	1273	I147287	0000.020	0	1	2	2	2	2	2
00915	H	CALCIUM DIS BKICP	CADBKICP	1895		0000.002	1	2	2	3	4	4	4
00916	B	CALCIUM, TOTAL USGS	CA TOTAL	0244	I315285	0000.100	0	0	1	2	2	2	2
00916	A	CALCIUM, TOTAL EPA	CA T EPA	0324	I315385	0000.100	0	0	1	2	2	2	2
00917	A	CALCIUM, BTM MAT	CA B.M.	0696	I515285	0010.000	0	0	0	0	1	2	2
00924	A	MAGNESIUM, BTM MAT	MG B.M.	0697	I544785	0010.000	0	0	0	0	1	2	2
00925	B	MAGNESIUM, DISSOLV.	MG DISS	0040	I144785	0000.100	0	0	1	2	2	2	2
00925	C	MAGNESIUM, DISSOLVED	MG-ICP	0663	I147287	0000.010	0	1	2	2	2	2	2

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
00925	A	MAGNESIUM, DIS LWLVL	MG DISLL	0832	I144785	0000.010	0	1	2	2	2	2	2
00925	D	MG ICP LL	MG LL	1274	I147287	0000.010	0	1	2	2	2	2	2
00925	H	MAGNESIUM DIS BKICP	MGDBKICP	1897		0000.001	1	2	2	3	4	4	4
00927	B	MAGNESIUM, TOT. USGS	MG TOTAL	0261	I344785	0000.100	0	0	1	2	2	2	2
00927	A	MAGNESIUM, TOTAL EPA	MG T EPA	0325	I344885	0000.100	0	0	1	2	2	2	2
00929	B	SODIUM, TOTAL USGS	NA TOTAL	0320	I373585	0000.100	0	0	1	2	2	2	2
00929	A	SODIUM, TOTAL EPA	NA T EPA	0326	I373685	0000.100	0	0	1	2	2	2	2
00930	B	SODIUM, DIS.	NA DISS.	0059	I173585	0000.100	0	0	1	2	2	2	2
00930	C	SODIUM, DISSOLVED	NA-ICP	0675	I147287	0000.200	0	0	1	2	2	2	2
00930	A	SODIUM, DISS. LOWLVL	NA DISLL	0834	I173585	0000.010	0	1	2	2	2	2	2
00930	D	NA ICP LL	NA LL	1276	I147287	0000.200	0	0	1	2	2	2	2
00930	H	SODIUM DIS BKICP	NADBKICP	1898		0000.025	1	2	2	3	4	4	4
00934	A	SODIUM, BTM MAT	NA B.M.	0699	I573585	0010.000	0	0	0	0	1	2	2
00935	B	POTASSIUM, DISSOLVED	K DISS.	0054	I163085	0000.100	0	0	1	2	2	2	2
00935	A	POTASSIUM, DIS LWLVL	K DIS LL	0833	I163085	0000.010	0	1	2	2	2	2	2
00937	B	POTASSIUM, TOT. USGS	K TOTAL	0321	I363085	0000.100	0	0	1	2	2	2	2
00937	A	POTASSIUM, TOTAL EPA	K T EPA	0327	I363185	0000.100	0	0	1	2	2	2	2
00938	A	POTASSIUM, BTM MAT	K B.M.	0698	I563085	0010.000	0	0	0	0	1	2	2
00940	I	CHLORIDE-IC-LOW ION	CL-IC-LL	1259	I205885	0000.010	0	1	2	2	2	2	2
00940	J	CHLORIDE DIS IC	CL D IC	1571	I205785	0000.100	0	0	1	2	2	2	2
00945	E	SULFATE-IC-LOW ION	SO4ICLL	1263	I205885	0000.010	0	1	2	2	2	2	2
00945	G	SULFATE DIS IC	SO4 D IC	1572	I205785	0000.100	0	0	1	2	2	2	2
00950	B	FLUORIDE, DISSOLVED	F DISS	0031	I232778	0000.100	0	0	1	2	2	2	2
00950	D	FLUORIDE-IC-LOW ION	F-IC-LL	1260	I205885	0000.010	0	1	2	2	2	2	2
00951	E	F WWR DW	FDW	2349		0000.200	0	0	1	2	2	2	2
00955	C	SILICA, DIS.	SIO2 DIS	0056	I270085	0000.100	0	0	1	2	2	2	2
00955	D	SILICA, DISSOLVED	SIO2-ICP	0667	I147287	0000.010	0	1	2	2	2	2	2
00955	E	SIO2 ICP LL	SIO2 LL	1275	I147287	0000.010	0	1	2	2	2	2	2
00955	H	SILICA DIS BKICP	SIDBKICP	1899		0000.020	1	2	2	3	4	4	4
01000	B	ARSENIC, DISSOLVED	AS DISS	0112	I206285	0001.000	0	0	0	1	2	2	2
01002	B	ARSENIC, TOTAL	AS TOTAL	0118	I406285	0001.000	0	0	0	1	2	2	2
01002	C	ARSENIC GFAA EPA TOT	AS EPA	1584	I000091	0001.000	0	0	0	1	2	2	2
01002	D	AS WWR GFAA DW	ASWWRDW	2337		0001.000	0	0	0	1	2	2	2
01003	C	ARSENIC, BTM. MAT.	AS B.M.	0597	I606285	0001.000	0	0	0	1	2	2	2
01005	B	BARIUM, DIS.	BA DISS	0007	I108485	0100.000	0	0	0	0	0	1	2
01005	C	BARIUM, DISSOLVED	BA-ICP	0641	I147287	0002.000	0	0	0	1	2	2	2
01005	G	BARIUM DIS ICPMS	BADICPMS	1786	I247792	0001.000	0	0	0	1	2	3	3
01005	H	BARIUM DIS BKICPMS	BA DBKMS	1879		0000.200	1	2	2	3	4	4	4
01007	A	BARIUM, TOTAL	BA TOTAL	0234	I308485	0100.000	0	0	0	0	0	1	2
01007	B	BA WWR ICP DW	BAWWRDW	2345		0005.000	0	0	0	1	2	2	2
01008	A	BARIUM, BTM MAT	BA B.M.	0521	I508485	0010.000	0	0	0	0	1	2	2
01010	A	BERYLLIUM, DIS.	BE DISS	0170	I109585	0010.000	0	0	0	0	1	2	2
01010	B	BERYLLIUM, DISSOLVED	BE-ICP	0655	I147287	0000.500	0	0	1	2	2	2	2
01010	G	BERYLLIUM DIS ICPMS	BEDICPMS	1787	I247792	0001.000	0	0	0	1	2	3	3
01010	H	BERYLLIUM DISBKICPMS	BE DBKMS	1880		0000.200	1	2	2	3	4	4	4
01012	A	BERYLLIUM, TOTAL	BE TOTAL	0236	I309585	0010.000	0	0	0	0	1	2	2
01012	B	BE WWR ICP DW	BEWWRDW	2346		0002.000	0	0	0	1	2	2	2
01013	A	BERYLLIUM, BTM MAT	BE B.M.	0522	I509585	0001.000	0	0	0	1	2	2	2

Appendix C: Parameter Method Codes

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
01020	B	BORON, DISSOLV.	BORON D	1183	I111486	0010.000	0	0	0	0	1	2	2
01020	H	BORON DIS BKICP	B DBKICP	1894		0002.000	1	2	2	3	4	4	4
01020	F	BORON DISSOLVED	B_DIS	2110	I147295	0004.000	0	0	0	2	3	3	3
01022	B	BORON, TOT-REC.	B TOTAL	1286	I311486	0010.000	0	0	0	0	1	2	2
01023	C	BORON,REC. FROM B.M.	B B.M.	1285	I511486	0010.000	0	0	0	0	1	2	2
01025	A	CADMIUM, DISSOLV.	CD DISS	0126	I113585	0010.000	0	0	0	0	1	2	2
01025	D	CADMIUM, DISSOLVED	CD-ICP	0673	I147287	0001.000	0	0	0	1	2	2	2
01025	E	CADMIUM, DISS, GF	CD D GF	1250	I113785	0000.100	0	0	1	2	2	2	2
01025	F	CADMIUM GFAA DIS	CD DIS	1554	I213889	0001.000	0	0	0	1	2	2	2
01025	G	CADMIUM DIS ICPMS	CDDICPMS	1788	I247792	0001.000	0	0	0	1	2	3	3
01025	H	CADMIUM DIS BKICPMS	CD DBKMS	1881		0000.300	1	2	2	3	4	4	4
01027	A	CADMIUM, TOTAL	CD TOTAL	0131	I313585	0010.000	0	0	0	0	1	2	2
01027	F	CADMIUM GFAA TOT	CD TOT	1555	I413889	0001.000	0	0	0	1	2	2	2
01027	G	CD WWR GFAA DW	CDWWRDW	2339		0001.000	0	0	0	1	2	2	2
01028	B	CADMIUM, BTM MAT	CD B.M.	0502	I513585	0001.000	0	0	0	1	2	2	2
01029	B	CHROMIUM, BTM MAT	CR B.M.	0505	I523685	0001.000	0	0	0	1	1	2	2
01030	E	CHROMIUM, DISSOLVED	CR ICP	0722	I147287	0005.000	0	0	0	1	2	2	2
01030	D	CHROMIUM, DISS, GF	CH D GF	1251	I123585	0000.500	0	0	1	2	2	2	2
01030	G	CHROMIUM DIS ICPMS	CRDICPMS	1789	I247792	0001.000	0	0	0	1	2	3	3
01030	H	CHROMIUM DIS BKICPMS	CR DBKMS	1882		0000.200	1	2	2	3	4	4	4
01030	I	CHROMIUM GFAA DIS	CR GF DI	1936	I123393	0001.000	0	0	1	2	2	2	2
01032	A	CHROMIUM HEX., DIS.	CR HEX	0016	I123285	0001.000	0	0	0	1	2	2	2
01034	B	CHROMIUM, TOTAL	CR TOTAL	0246	I323678	0010.000	0	0	0	0	1	2	2
01034	E	CHROMIUM GFAA TOT	CR GF T	1937	I323393	0001.000	0	0	1	2	2	2	2
01034	F	CR WWR GFAA DW	CRWWRDW	2341		0001.000	0	0	0	1	2	2	2
01035	A	COBALT, DIS.	CO DISS	0148	I123985	0050.000	0	0	0	0	1	2	2
01035	C	COBALT, DISSOLV.	CO-ICP	0644	I147287	0003.000	0	0	0	1	2	2	2
01035	E	COBALT, DISS, GF	CO D GF	1252	I124185	0000.500	0	0	1	2	2	2	2
01035	F	COBALT GFAA DIS	CO DIS	1556	I224389	0001.000	0	0	0	1	2	2	2
01035	G	COBALT DIS ICPMS	CODICPMS	1790	I247792	0001.000	0	0	0	1	2	3	3
01035	H	COBALT DIS BKICPMS	CO DBKMS	1883		0000.200	1	2	2	3	4	4	4
01037	A	COBALT, TOT.	CO TOTAL	0149	I323985	0050.000	0	0	0	0	1	2	2
01037	F	COBALT GFAA TOT	CO TOT	1557	I424389	0001.000	0	0	0	1	2	2	2
01038	B	COBALT, BTM MATERIAL	CO B.M.	0506	I523985	0005.000	0	0	0	0	1	2	2
01040	A	COPPER, DISSOLVED	CU DISS	0151	I127085	0010.000	0	0	0	0	1	2	2
01040	C	COPPER, DISSOLVED	CU-ICP	0657	I147287	0010.000	0	0	0	0	1	2	2
01040	E	COPPER, DISS, GF	CU D GF	1253	I127285	0000.500	0	0	1	2	2	2	2
01040	F	COPPER GFAA DIS	CU DIS	1558	I227489	0001.000	0	0	0	1	2	2	2
01040	G	COPPER DIS ICPMS	CUDICPMS	1791	I247792	0001.000	0	0	0	1	2	3	3
01040	H	COPPER DIS BKICPMS	CU DBKMS	1884		0000.200	1	2	2	3	4	4	4
01042	A	COPPER, TOTAL	CU TOTAL	0156	I327085	0010.000	0	0	0	0	1	2	2
01042	F	COPPER GFAA TOT	CU TOT	1559	I427489	0001.000	0	0	0	1	2	2	2
01043	B	COPPER, BTM MATERIAL	CU B.M.	0507	I527085	0001.000	0	0	0	1	2	2	2
01045	B	IRON, TOTAL	TOT FE	0189	I338185	0010.000	0	0	0	0	1	2	2
01046	C	IRON, DIS.	DIS FE	0172	I138185	0010.000	0	0	0	0	1	2	2
01046	D	IRON, DISSOLV.	FE-ICP	0645	I147287	0003.000	0	0	0	1	2	2	2
01046	E	FE ICP LL	FE ICPLL	1271	I147287	0003.000	0	0	0	1	2	2	2
01046	H	IRON DIS BKICP	FEDBKICP	1896		0003.000	1	2	2	3	4	4	4

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
01049	A	LEAD, DISSOLV.	PB DISS	0191	I139985	0100.000	0	0	0	0	1	2	
01049	C	LEAD, DISSOLVED	PB-ICP	0646	I147287	0010.000	0	0	0	0	1	2	2
01049	E	LEAD, DISS, GF	PB D GF	1254	I140185	0000.500	0	0	1	2	2	2	
01049	F	LEAD GFAA DIS	PB DIS	1560	I240389	0001.000	0	0	0	1	2	2	
01049	G	LEAD DIS ICPMS	PBDICPMS	1792	I247792	0001.000	0	0	0	1	2	3	3
01049	H	LEAD DIS BKICPMS	PB DBKMS	1885		0000.300	1	2	2	3	4	4	4
01051	A	LEAD, TOT.	PB TOTAL	0192	I339985	0100.000	0	0	0	0	0	1	2
01051	F	LEAD GFAA TOT	PB TOT	1561	I440389	0001.000	0	0	0	1	2	2	2
01051	G	PB WWR GFAA DW	PBWWRDW	2342		0001.000	0	0	0	1	2	2	2
01052	B	LEAD, BTM. MATERIAL	PB B.M.	0510	I539985	0010.000	0	0	0	0	1	2	2
01053	A	MANGANESE, BTM MAT	MN B.M.	0512	I545485	0001.000	0	0	0	1	2	2	2
01055	A	MANGANESE, TOTAL	MN TOT	0041	I345485	0010.000	0	0	0	0	1	2	2
01056	A	MANGANESE, DISSOLV.	MN DISS	0042	I145485	0010.000	0	0	0	0	1	2	2
01056	C	MANGANESE, DISSOLVED	MN-ICP	0648	I147287	0001.000	0	0	0	1	2	2	2
01056	D	MANGANESE, DISS, GF	MN D GF	1255	I145585	0000.200	0	0	1	2	2	2	
01056	E	MN ICP LL	MN LL	1272	I147287	0001.000	0	0	0	1	2	2	2
01056	G	MANGANESE DIS ICPMS	MNDICPMS	1793	I247792	0001.000	0	0	0	1	2	3	3
01056	H	MANGANESE DISBKICPMS	MN DBKMS	1886		0000.100	1	2	2	3	4	4	4
01057	A	THALLIUM, DIS AAGF	TL DIS G	0492	I186685	0000.500	0	0	0	1	2	2	2
01057	H	THALLIUM DIS BKICPMS	TL DBKMS	1893		0000.100	1	2	2	3	4	4	4
01059	B	THALLIUM-T EPA CONT	TH-TEPAC	1569	E279.2	0005.000	0	0	1	2	2	2	2
01059	D	TL WWR GFAA	TLWWRDW	2340		0001.000	0	0	0	1	2	2	2
01060	A	MOLYBDENUM, DISS.	MO-ICP	0649	I147287	0010.000	0	0	0	0	1	2	2
01060	G	MOLYBDENUM DIS ICPMS	MODICPMS	1794	I247792	0001.000	0	0	0	1	2	3	3
01060	H	MOLYBDENUMDISBKICPMS	MO DBKMS	1887		0000.200	1	2	2	3	4	4	4
01060	C	MOLYBDENUM DIS GFAA	MO DGFAA	1998		0001.000	0	0	1	2	2	2	
01062	B	MOLYBDENUM WWR GFAA	MO TGFAA	1999		0001.000	0	0	1	2	2	2	
01063	A	MOLYBDENUM, BTM MAT	MO B.M.	0523	I549085	0000.100	0	0	1	2	2	2	
01065	A	NICKEL, DISSOLVED	NI DISS	0197	I149985	0100.000	0	0	0	0	0	1	2
01065	E	NICKEL,DISSOLVED	NI ICP	0721	I147287	0010.000	0	0	0	1	1	2	2
01065	D	NICKEL, DISS, GF	NI D GF	1256	I150185	0001.000	0	0	0	1	2	2	2
01065	F	NICKEL GFAA DIS	NI DIS	1562	I250389	0001.000	0	0	0	1	2	2	2
01065	G	NICKEL DIS ICPMS	NIDICPMS	1795	I247792	0001.000	0	0	0	1	2	3	3
01065	H	NICKLE DIS BKICPMS	NI DBKMS	1888		0000.500	1	2	2	3	4	4	4
01067	A	NICKEL, TOTAL	NI TOTAL	0198	I349985	0100.000	0	0	0	0	0	1	2
01067	F	NICKEL GFAA TOT	NI TOT	1563	I450389	0001.000	0	0	0	1	2	2	2
01067	G	NI WWR ICP DW	NIWWRDW	2344		0050.000	0	0	0	0	1	2	2
01068	B	NICKEL, BTM MATERIAL	NI B.M.	0519	I549985	0010.000	0	0	0	0	1	2	2
01075	C	SILVER, DISSOLVED	AG ICP	0723	I147287	0001.000	0	0	1	1	2	2	2
01075	F	SILVER GFAA DIS	AG DIS	1552	I272489	0001.000	0	0	0	1	2	2	2
01075	G	SILVER DIS ICPMS	AGDICPMS	1796	I247792	0001.000	0	0	0	1	2	3	3
01075	H	SILVER DIS LL GFAA	AG D GF	1863	I272593	0000.200	0	1	2	2	2	2	
01075	I	SILVER DIS BKICPMS	AG DBKMS	1889		0000.200	1	2	2	3	4	4	4
01077	F	SILVER GFAA TOT	AG TOT	1553	I472489	0001.000	0	0	0	1	2	2	2
01080	A	STRONTIUM, DIS.	SR DISS	0062	I180085	0010.000	0	0	0	0	1	2	2
01080	B	STRONTIUM, DISSOLVED	SR-ICP	0652	I147287	0000.500	0	0	1	1	2	2	2
01080	H	STRONTIUM DISBKICPMS	SR DBKMS	1892		0000.100	1	2	2	3	4	4	4
01082	A	STRONTIUM, TOTAL	SR TOTAL	0290	I380085	0010.000	0	0	0	0	1	2	2

Appendix C: Parameter Method Codes

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A B C D E F G
01083	A	STRONTIUM, BTM MAT	SR B.M.	0530	I580085	0001.000	0 0 0 1 2 2 2
01085	B	VANADIUM, DISSOLVED	V-ICP	0653	I147287	0006.000	0 0 0 1 2 2 2
01085	D	VANADIUM, DIS. AUTO.	V DIS. A	1210	I288085	0001.000	0 0 1 2 2 2 2
01090	A	ZINC, DIS.	ZN DISS	0067	I190085	0010.000	0 0 0 0 1 2 2
01090	B	ZINC, DISSOLVED	ZN-ICP	0671	I147287	0003.000	0 0 0 1 2 2 2
01090	D	ZINC, DISS, GF	ZN, D GF	1257	I190185	0000.500	0 0 1 2 2 2 2
01090	G	ZINC DIS ICPMS	ZNDICPMS	1798	I247792	0001.000	0 0 0 1 2 3 3
01090	H	ZINC DIS BKICPMS	ZN DBKMS	1891		0000.500	1 2 2 3 4 4 4
01092	A	ZINC, TOTAL	ZN TOTAL	0296	I390085	0010.000	0 0 0 0 1 2 2
01093	A	ZINC, BTM. MATERIAL	ZN B.M.	0518	I590085	0001.000	0 0 0 1 2 2 2
01095	A	ANTIMONY, DISSOLVED	ANTIM.DS	0077	I105585	0001.000	0 0 0 1 2 2 2
01095	G	ANTIMONY DIS ICPMS	SBDICPMS	1785	I247792	0001.000	0 0 0 1 2 3 3
01095	H	ANTIMONY DIS BKICPMS	SB DBKMS	1878		0000.200	1 2 2 3 4 4 4
01097	A	ANTIMONY, TOTAL	SB TOT	0080	I305585	0001.000	0 0 0 1 2 2 2
01097	B	ANTIMONY-T GFAA-EPA	SBTOTEPA	2061		0001.000	0 0 0 1 2 2 2
01097	C	SB WWR GFAA DW	SBWWRDW	2338		0001.000	0 0 0 1 2 2 2
01098	A	ANTIMONY, BTM MAT	SB B.M.	0534	I505585	0001.000	0 0 0 1 2 2 2
01105	C	ALUMINUM-TOTAL-DCP	AL TOT	1283	I305486	0010.000	0 0 0 0 1 2 2
01106	D	ALUMINUM DCP LL, DIS	AL LL	1267		0001.000	0 0 0 1 2 2 2
01106	E	ALUMINUM-DIS-DCP	AL DIS	1284	I105486	0010.000	0 0 0 0 1 2 2
01106	G	ALUMINUM DIS ICPMS	ALDICPMS	1784	I247792	0001.000	0 0 0 1 2 3 3
01106	H	ALUMINUM DIS BKICPMS	AL DBKMS	1877		0000.300	1 2 2 3 4 4 4
01106	F	ALUMINUM DISSOLVED	AL_DIS	2111	I147295	0005.000	0 0 0 2 3 3 3
01108	C	ALUMINUM-BTM-DCP	AL-BTM	1282	I505486	0010.000	0 0 0 0 1 2 2
01130	A	LITHIUM, DISSOLV.	LI DISS	0039	I142585	0010.000	0 0 0 0 1 2 2
01130	B	LITHIUM, DISSOLVED	LI-ICP	0664	I147287	0004.000	0 0 0 1 2 2 2
01132	A	LITHIUM, TOTAL	LI TOTAL	0277	I342585	0010.000	0 0 0 0 1 2 2
01133	A	LITHIUM, BTM. MAT.	LI B.M.	0541	I542585	0001.000	0 0 0 1 2 2 2
01145	A	SELENIUM, DISSOLVED	SE DISS	0087	I266785	0001.000	0 0 0 1 2 2 2
01147	A	SELENIUM, TOTAL	SE TOTAL	0286	I466785	0001.000	0 0 0 1 2 2 2
01147	B	SELENIUM GFAA EPA TO	SE EPA-T	1585	I000091	0001.000	0 0 0 1 2 2 2
01147	C	SE WWR GFAA DW	SEWWRDW	2336		0001.000	0 0 0 1 2 2 2
01148	A	SELENIUM, BTM MAT	SE B.M.	0517	I666785	0001.000	0 0 0 1 2 2 2
01170	B	IRON, BOTTOM MAT.	FE BTM	0190	I538185	0001.000	0 0 0 1 2 2 2
03515	B	G.BETA-DS-CS137-FF	G.BE.137	0798	R112076	0004.000	0 0 1 2 2 2 2
03515	D	G.BETA,HS,CS137,FF	GB,S,FF	1360		0004.000	0 0 1 2 2 2 2
04024	D	PROPACHLOR D LE	PROPACDL	4040		0000.000	1 2 2 2 1 1 1
04024	E	PROPACHLOR D FE	PROPACDF	4240		0000.000	1 2 2 2 1 1 1
04028	D	BUTYRATE D LE	BUTYLADL	4006		0000.000	1 2 2 2 1 1 1
04028	E	BUTYRATE D FE	BUTYLADF	4206		0000.000	1 2 2 2 1 1 1
04029	A	BROMACIL - DLE	BROMACIL	5415		0000.000	1 2 2 2 2 2 3
04029	B	BROMACIL - DFE	BROMACIL	5615		0000.000	1 2 2 2 2 2 3
04035	A	SIMAZINE DISSOLVED	SIMAZI D	1596	O112192	0000.050	0 2 2 2 2 2 2
04035	D	SIMAZINE D LE	SIMAZIDL	4043		0000.000	1 2 2 2 1 1 1
04035	E	SIMAZINE D FE	SIMAZIDF	4243		0000.000	1 2 2 2 1 1 1
04036	A	PROMETRYN DISSOLVED	PROMTR D	1598	O112192	0000.050	0 2 2 2 2 2 2
04037	A	PROMETON DISSOLVED	PROMET D	1597	O112192	0000.050	0 2 2 2 2 2 2
04037	D	PROMETON D LE	PROMETDL	4039		0000.000	1 2 2 2 1 1 1

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A B C D E F G						
							A	B	C	D	E	F	G
04037	E	PROMETON D FE	PROMETDF	4238		0000.000	1	2	2	2	1	1	1
04038	A	DESI SOPROPYL ATRAZIN	DEISOPD	1592	O112192	0000.050	0	2	2	2	2	2	2
04040	A	DESETHYLATRAZINE DIS	DESETH D	1591	O112192	0000.050	0	2	2	2	2	2	2
04040	D	ATRAZINE DESETHYLDLE	DEATRZDL	4002		0000.000	1	2	2	2	1	1	1
04040	E	ATRAZINE DESETHYLDFE	DEATRZDF	4202		0000.000	1	2	2	2	1	1	1
04041	A	CYANAZINE DISSOLVED	CYANAZ D	1590	O112192	0000.200	0	0	1	2	2	2	2
04041	D	CYANAZINE D LE	CYANAZDL	4010		0000.000	1	2	2	2	1	1	1
04041	E	CYANAZINE D FE	CYANAZDF	4210		0000.000	1	2	2	2	1	1	1
04095	D	FONOFO S D LE	FONOFO DL	4022		0000.000	1	2	2	2	1	1	1
04095	E	FONOFO S D FE	FONOFO DF	4222		0000.000	1	2	2	2	1	1	1
04105	A	2SPE PO210 BTM	2SPE1545	1546		0000.000	1	2	3	3	3	3	3
04106	A	2SPE RA-228 BTM	2SPE1526	1527		0000.000	1	2	3	3	3	3	3
04107	B	2SPE RA-226 BTM	2SPE1528	1529		0000.000	1	2	3	3	3	3	3
04108	A	2SPE TH230 BTM	2SPE1537	1538		0000.000	1	2	3	3	3	3	3
04110	A	2SPE TH232 BTM	2SPE1535	1536		0000.000	1	2	3	3	3	3	3
04111	A	2SPE U-234 BTM	2SPE1509	1510		0000.000	1	2	3	3	3	3	3
04112	A	2SPE U-235 BTM	2SPE1515	1516		0000.000	1	2	3	3	3	3	3
04113	A	2SPE-U-238-SUS	2SPE1507	1508		0000.000	1	2	3	3	3	3	3
04125	A	GROSS ALPHA TH230BTM	GATHBTM	1520		0006.000	0	0	0	2	2	2	2
04126	B	G.ALPHA-DS-TH-FF	GA,FF,TH	1397		0003.000	0	0	1	2	2	2	2
04126	D	G.ALPHA,HS,TH,FF	GA,ST,FF	1445		0003.000	0	0	1	2	2	2	2
04443	A	DIQUAT EPA 544.1	DIQUAEPA	2229		0001.000	0	0	0	2	2	2	2
07000	D	TRITIUM, TOT. IN H2O	T.LIQ.SC	0452	R117176	0026.000	0	0	0	0	2	2	2
07000	A	TRITIUM (IN H2O) TOT	H-3,EGAS	0460		0005.700	0	0	0	1	2	3	3
07000	E	TRIT,ENR,LL,LIQ SCIN	H3,EN,LS	0624		0002.500	0	0	0	2	2	2	2
07000	B	TRITIUM, TOTAL	H3 TOTAL	1043		0000.300	0	0	1	2	2	2	2
07000	F	TRITIUM-LL-EE-LS	H3	1565	R117476	0001.000	0	0	0	1	2	2	2
07000	G	TRITIUM-GAS-COUNT-HL	H3-GS-CT	1567		0015.000	0	0	0	0	2	2	2
09507	B	RA-226 BTM GAMMA	RA226BTM	1528		0000.400	0	0	1	2	2	2	2
09510	B	RADIUM-226, DISS. PC	R.226-PL	0799	R114076	0000.100	0	0	1	2	2	2	2
09511	B	RADIUM-226, DISS. RN	R.226-BR	0794	R114176	0000.020	0	1	2	2	2	3	3
13503	B	STRONTIUM-90 DISS.	SR-90,D.	0795	R116076	0000.500	0	0	1	2	2	3	3
17503	B	PB210DISH2O	PB210DIS	1503		0001.500	0	0	0	2	2	2	2
17507	B	LEAD 210 BOTTOM MAT.	PB210BTM	1182		0000.100	0	0	1	2	3	3	3
17507	C	PB210 BTM GAMMA	PB210BTM	1549		0002.000	0	0	0	2	2	2	2
19503	B	PO210DISH20	PO210DIS	1505		0001.000	0	0	0	2	2	2	2
19507	A	PO210 BTM	PO210BTM	1545		0000.100	0	0	1	2	2	2	2
22001	A	PLUTONIUM-238 DIS	PU238DIS	1963		0000.100	0	1	1	2	2	2	2
22603	A	U-238,ALPHA SPEC	U-238	1368	R118276	0000.100	0	0	1	2	2	2	2
22610	A	U-234,ALPHA SPEC	U-234	1366	R118276	0000.100	0	0	1	2	2	2	2
22612	A	U-235U-235 BTM GAMMA	U-235BTM	1515		0000.000	0	0	0	2	2	2	2
22620	A	U-235,ALPHA SPEC	U-235	1367	R118276	0000.100	0	0	1	2	2	2	2
22703	H	U DIS,FLUOR,FF	U,D,F,FF	1006		0001.000	0	0	1	2	2	2	2
22703	C	U.DIS,DIR,LIP,FF	U,D,P,FF	1385		0000.400	0	0	1	2	2	2	2
22703	E	U.DIS,EXT,LIP,FF	U,E,P,FF	1386		0000.010	0	1	2	2	2	2	2
22703	G	URANIUM DIS ICPMS	UDICPMS	1797	I247792	0001.000	0	0	0	1	2	3	3
22703	I	URANIUM DIS BKICPMS	U DBKMS	1890		0000.200	1	2	2	3	4	4	4
26503	B	TH230 DIS H2O	TH230DIS	1472		0001.000	0	0	0	2	2	2	2

Appendix C: Parameter Method Codes

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
26507	A	TH230 BTM	TH230BM	1537		0000.100	0	0	1	2	2	2	2
26631	A	TH-232 BTM	TH232BTM	1535		0000.100	0	0	1	2	2	2	2
28014	A	U-234 BTM GAMMA	U-234BTM	1509		0001.000	0	0	0	2	2	2	2
28016	A	U-238 BTM GAMMA	U-238BTM	1511		0001.000	0	0	0	2	2	2	2
29801	A	ALK DIS LAB CACO3	DIS ALK	2109		0001.000	0	0	1	2	2	3	3
29816	A	SB-SUSP SED-UGG-GD	SB-SUSED	2053		0000.100	0	1	2	3	3	3	3
29818	A	AS-SUSP SED-UGG-GD	AS-SUSED	2052		0000.100	0	1	2	3	3	3	3
29820	A	BA-SUSP SED-UGG-GD	BA-SUSED	2026		0001.000	0	1	2	2	2	2	2
29822	A	BE-SUSP SED-UGG-GD	BE-SUSED	2027		0001.000	0	1	2	2	2	2	2
29826	A	CD-SUSP SED-UGG-GD	CD-SUSED	2051		0000.100	0	1	2	3	3	3	3
29829	A	CR-SUSP SED-UGG-GD	CR-SUSED	2031		0001.000	0	1	2	2	2	2	2
29832	A	CU-SUSP SED-UGG-GD	CU-SUSED	2032		0001.000	0	1	2	2	2	2	2
29836	A	PB-SUSP SED-UGG-GD	PB-SUSED	2055		0000.250	0	1	2	3	3	3	3
29839	A	MN-SUSP SED-UGG-GD	MN-SUSED	2038		0004.000	0	1	2	2	2	2	2
29853	A	V-SUSP SED-UGG-GD	V-SUSED	2046		0002.000	0	1	2	2	2	2	2
29855	A	ZN-SUSP SED-UGG-GD	ZN-SUSED	2049		0004.000	0	1	2	2	2	2	2
29867	A	AMERICIUM-241 DIS	AM241DIS	1961		0000.100	0	1	1	2	2	2	2
30200	A	DALAPM EPA 515.1	DALAPEPA	2200		0005.000	1	2	3	3	3	3	3
30217	B	DIBROMOMETHANE	DIBROMOM	1009	O311583	0000.200	0	0	1	2	2	2	2
30217	A	DIBROMOMETHANE T-H	CH2BR2	1690	E524 2	0003.000	0	0	0	2	2	2	2
30217	C	DIBROMOMETHANE	DIBROMOM	5824	O311583	0000.200	0	0	1	2	2	2	2
30217	Z	DIBROMOMETHANE	NAWQAVOC	5902		0000.000	3	3	3	3	3	3	3
30221	A	AL-SUSP SED-PCT-GD	AL-SUSED	2017		0000.005	2	3	3	3	3	3	3
30234	A	BROMACIL WWR	BROMACIL	1463	O310691	0000.200	0	0	1	2	2	2	2
30235	A	BUTACHLOR WWR	BUTACHLO	1468	O310691	0000.100	0	0	1	2	2	2	2
30236	A	BUTYRATE WWR	BUTYRATE	1470	O310691	0000.100	0	0	1	2	2	2	2
30240	A	CA-SUSP SED-PCT-GD	CA-SUSED	2018		0000.005	2	3	3	3	3	3	3
30245	A	CARBOXIN WWR	CARBOXIN	1464	O310691	0000.200	0	0	1	2	2	2	2
30254	A	CYCLOATE WWR	CYCLOATE	1469	O310691	0000.100	0	0	1	2	2	2	2
30255	A	DIPHENAMID WWR	DIPHENAM	1465	O310691	0000.100	0	0	1	2	2	2	2
30264	A	HEXAZINONE WWR	HEXAZINO	1466	O310691	0000.200	0	0	1	2	2	2	2
30269	A	FE-SUSP SED-PCT-GD	FE-SUSED	2019		0000.005	2	3	3	3	3	3	3
30277	A	MG-SUSP SED-PCT-GD	MG-SUSED	2021		0000.005	2	3	3	3	3	3	3
30282	A	METHIOCARB WWR	METHIOCA	1449	O310790	0000.023	0	0	1	2	2	2	2
30284	A	MO-SUSP SED-UGG-GD	MO-SUSED	2054		0000.100	0	1	2	3	3	3	3
30286	A	ND-SUSP SED-UGG-GD	ND-SUSED	2040		0004.000	0	1	2	2	2	2	2
30288	A	NI-SUSP SED-UGG-GD	NI-SUSED	2041		0002.000	0	1	2	2	2	2	2
30290	A	NB-SUSP SED-UGG-GD	NB-SUSED	2039		0004.000	0	1	2	2	2	2	2
30292	A	P-SUSP SED-PCT-GD	P-SUSED	2023		0000.005	2	3	3	3	3	3	3
30294	A	K-SUSP SED-PCT-GD	K-SUSED	2020		0000.050	2	3	3	3	3	3	3
30295	A	PROPACHLOR WWR	PROPACHL	1471	O310691	0000.100	0	0	1	2	2	2	2
30296	A	PROPOXUR WWR	PROPOXUR	1448	O310790	0000.015	0	0	1	2	2	2	2
30298	A	SC-SUSP SED-UGG-GD	SC-SUSED	2042		0002.000	0	1	2	2	2	2	2
30302	A	AG-SUSP SED-UGG-GD	AG-SUSED	2050		0000.100	0	1	2	3	3	3	3
30304	A	NA-SUSP SED-PCT-GD	NA-SUSED	2022		0000.005	2	3	3	3	3	3	3
30306	A	SR-SUSP SED-UGG-GD	SR-SUSED	2044		0002.000	0	1	2	2	2	2	2
30310	A	TA-SUSP SED-UGG-GD	TA-SUSED	2045		0040.000	0	1	2	2	2	2	2
30311	A	TERBACIL WWR	TERBACIL	1462	O310691	0000.200	0	0	1	2	2	2	2

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
30313	A	TH-SUSP SED-UGG-GD	TH-SUSED	2057		0000.100	0	1	2	3	3	3	3
30317	A	TI-SUSP SED-PCT-GD	TI-SUSED	2024		0000.005	2	3	3	3	3	3	3
30321	A	U-SUSP SED-UGG-GD	U-SUSED	2058		0000.100	0	1	2	3	3	3	3
30324	A	VERNOLATE WWR	VERNOLAT	1467	O310691	0000.100	0	0	1	2	2	2	2
30326	A	YB-SUSP SED-UGG-GD	YB-SUSED	2048		0001.000	0	1	2	2	2	2	2
30328	A	Y-SUSP SED-UGG-GD	Y-SUSED	2047		0002.000	0	1	2	2	2	2	2
31361	A	TNT, BTM. MAT.	TNT BTM	0399		0000.100	0	0	1	2	2	2	2
32101	A	DICHLOROBROMOMETHA,T	CHCL2BR	1019	O311583	0003.000	0	0	0	2	2	2	2
32101	B	DICHLOROBROMOMETHA,T	CHCL2BR	1295	E524 2	0000.200	0	0	1	2	2	2	2
32101	D	BRDICLMEH EPA524.2	BCL2MEPA	2244		0000.200	0	0	2	2	3	3	3
32101	C	DICHLOROBROMOMETHA T	CHCL2BR	5823	E524 2	0000.200	0	0	1	2	2	2	2
32101	Z	BROMODICHLOROMETHANE	NAWQAVOC	5904		0000.000	3	3	3	3	3	3	3
32102	A	CARBON TETRA., TOT.	CCL4	1013	O311583	0003.000	0	0	0	2	2	2	2
32102	B	CARBON TETRA., TOT.	CCL4	1289	E524 2	0000.200	0	0	1	2	2	2	2
32102	D	CARBONTET EPA524.2	CC14EPA	2239		0000.200	0	0	2	2	3	3	3
32102	C	CARBON TETRA. TOT.	CCL4	5817	E524 2	0000.200	0	0	1	2	2	2	2
32102	Z	CARBON TETRACHLORIDE	NAWQAVOC	5895		0000.000	3	3	3	3	3	3	3
32103	A	1,2-DICHLOROETHANE,T	CLC-CCL	1022	O311583	0003.000	0	0	0	2	2	2	2
32103	B	1,2-DICHLOROETHANE,T	CLC-CCL	1298	E524 2	0000.200	0	0	1	2	2	2	2
32103	D	1,2DICLETHANEPA524.2	DCLETEPA	2241		0000.200	0	0	2	2	3	3	3
32103	C	1,2-DICHLOROETHANE T	CLC-CCL	5820	E524 2	0000.200	0	0	1	2	2	2	2
32103	Z	1,2-DICHLOROETHANE	NAWQAVOC	5898		0000.000	3	3	3	3	3	3	3
32104	A	BROMOFORM, TOTAL	CHBR3	1012	O311583	0003.000	0	0	0	2	2	2	2
32104	B	BROMOFORM, TOTAL	CHBR3	1288	E524 2	0000.200	0	0	1	2	2	2	2
32104	D	BROMOTORM EPA524.2	BROMFEPA	2254		0000.500	0	0	2	2	3	3	3
32104	C	BROMOFORM TOTAL	CHBR3	5838	E524 2	0000.200	0	0	1	2	2	2	2
32104	Z	BROMOFORM	NAWQAVOC	5922		0000.000	3	3	3	3	3	3	3
32105	A	CHLORODIBROMO., TOT.	CHCLBR2	1015	O311583	0003.000	0	0	0	2	2	2	2
32105	B	CHLORODIBROMO., TOT.	CHCLBR2	1291	E524 2	0000.200	0	0	1	2	2	2	2
32105	D	CLDIBRMETH EPA524.2	C12BMEPA	2248		0000.200	0	0	2	2	3	3	3
32105	C	CHLORODIBROMO. TOT.	CHCLBR2	5831	E524 2	0000.200	0	0	1	2	2	2	2
32105	Z	DIBROMOCHLOROMETHANE	NAWQAVOC	5914		0000.000	3	3	3	3	3	3	3
32106	A	CHLOROFORM, TOTAL	CHCL3	1018	O311583	0003.000	0	0	0	2	2	2	2
32106	B	CHLOROFORM, TOTAL	CHCL3	1294	E524 2	0000.200	0	0	1	2	2	2	2
32106	D	CHLOROTORM EPA524.2	CHCL3EPA	2237		0000.200	0	0	2	2	3	3	3
32106	C	CHLOROFORM TOTAL	CHCL3	5815	E524 2	0000.200	0	0	1	2	2	2	2
32106	Z	CHLOROFORM	NAWQAVOC	5893		0000.000	3	3	3	3	3	3	3
32240	A	TANNIN & LIGNIN, TOT	TANNINLG	0138		0000.100	0	0	1	2	2	2	2
32730	A	PHENOLS, TOTAL	PHENOL	0052	O311083	0001.000	0	0	0	1	2	2	2
34010	A	TOLUENE, TOTAL	TOLUENE	1032	O311583	0003.000	0	0	0	2	2	2	2
34010	B	TOLUENE, TOTAL	TOLUENE	1308	E524 2	0000.200	0	0	1	2	2	2	2
34010	D	TOULENE EPE 524.2	TOLUEEPA	2245		0000.200	0	0	2	2	3	3	3
34010	C	TOLUENE TOTAL	TOLUENE	5826	E524 2	0000.200	0	0	1	2	2	2	2
34010	Z	TOLUENE	NAWQAVOC	5907		0000.000	3	3	3	3	3	3	3
34030	A	BENZENE, TOTAL	BENZENE	1011	O311583	0003.000	0	0	0	2	2	2	2
34030	B	BENZENE, TOTAL	BENZENE	1287	E524 2	0000.200	0	0	1	2	2	2	2
34030	D	BENZENE EPA524.2	BENZEP	2240		000.200	0	0	2	2	3	3	3
34030	C	BENZENE TOTAL	BENZENE	5819	E524 2	0000.200	0	0	1	2	2	2	2

Appendix C: Parameter Method Codes

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
34030	Z	BENZENE	NAWQAVOC	5897		0000.000	3	3	3	3	3	3	3
34200	A	ACENAPHTHYLENE, TOT.	ACPHTYL	1067	O311688	0005.000	0	0	0	1	2	2	2
34203	A	ACENAPHTHYLENE, BTM	B-ACNTYN	1113	O511683	0200.000	0	0	0	0	2	2	2
34205	A	ACENAPHTHENE, TOTAL	AC NENE	1066	O311688	0005.000	0	0	0	1	2	2	2
34208	A	ACENAPHTHENE, BTM	B-ACNENE	1112	O511683	0200.000	0	0	0	0	2	2	2
34210	A	ACROLEIN WH WAT REC	ACROLEIN	1650		0020.000	0	0	1	2	2	2	2
34210	Z	ACROLEIN	NAWQAVOC	5871		0000.000	3	3	3	3	3	3	3
34210	Y	ACROLEIN	NAWQAVOC	5955		0000.000	3	3	3	3	3	3	3
34215	A	ACRYLONITRILE TOTAL	ACRYLONT	1651		0020.000	0	0	1	2	2	2	2
34215	Z	ACRYLONITRILE	NAWQAVOC	5879		0000.000	3	3	3	3	3	3	3
34215	Y	ACRYLONITRILE	NAWQAVOC	5960		0000.000	3	3	3	3	3	3	3
34220	A	ANTHRACENE, TOTAL	ANTHRA	1068	O311688	0005.000	0	0	0	1	2	2	2
34223	A	ANTHRACENE, BTM	B-ANTHRA	1114	O511683	0200.000	0	0	0	0	2	2	2
34230	A	BENZO(B)FLUORANTHE,T	BZFL-B	1071	O311688	0010.000	0	0	0	1	2	2	2
34233	A	BENZOFLUORAN B BTM	B-BZFL-B	1117	O511683	0400.000	0	0	0	0	2	2	2
34242	A	BENZO(K)FLUORANTHE,T	BZ FL-K	1072	O311688	0010.000	0	0	0	1	2	2	2
34245	A	BENZOFLUORAN K BTM	B-BZFL-K	1118	O511683	0400.000	0	0	0	0	2	2	2
34247	A	BENZO(A)PYRENE, TOT.	BZPY	1073	O311688	0010.000	0	0	0	1	2	2	2
34247	B	BENZOAPYREPA525.2	BENZOEPA	2218		0000.000	0	0	1	2	3	3	3
34250	A	BENZOPYRENE, BTM	B-BZPY	1119	O511683	0400.000	0	0	0	0	2	2	2
34253	D	HCH ALPHA-D LE	HCH ALDL	4023		0000.000	1	2	2	2	1	1	1
34253	E	HCH ALPHA-D FE	HCH ALDF	4223		0000.000	1	2	2	2	1	1	1
34257	A	BETA BHC, BTM. MAT.	B BHCBTM	0824	O510483	0000.100	0	0	1	2	2	2	2
34259	A	DELTA BHC, TOTAL	D BHCWAT	0808	O310483	0000.010	0	1	2	2	2	2	2
34259	D	DELTA BHC WWR EPA608	D-BHC608	1622	EA60891	0000.090	0	2	2	2	2	2	2
34262	A	DELTA BHC, BTM. MAT.	D BHCBTM	0825	O510483	0000.100	0	0	1	2	2	2	2
34273	A	2-CHLORETHYL ETHER,T	CLETET	1077	O311688	0005.000	0	0	0	1	2	2	2
34276	A	B-CHLORETYL ET BTM	B-CLETET	1123	O511683	0200.000	0	0	0	0	2	2	2
34278	A	2-CHLORETH METHANE,T	CLETMT	1076	O311688	0005.000	0	0	0	1	2	2	2
34281	A	B-CHLOREXYMET, BTM	B-CLETMT	1122	O511683	0200.000	0	0	0	0	2	2	2
34283	A	2-CHLORISOPR ETHER,T	CLIPET	1078	O311688	0005.000	0	0	0	1	2	2	2
34286	A	B-CHLISOPRO ET BTM	B-CLIPET	1124	O511683	0200.000	0	0	0	0	2	2	2
34292	A	BUTYL BENZYL PHTHA,T	BU BZPT	1075	O311688	0005.000	0	0	0	1	2	2	2
34295	A	BUTYLBENPHTH, BTM	B-BUBZPT	1121	O511683	0200.000	0	0	0	0	2	2	2
34301	A	CHLOROBENZENE, TOTAL	CL-BENZ	1014	O311583	0003.000	0	0	0	2	2	2	2
34301	B	CHLOROBENZENE, TOTAL	CL-BENZ	1290	E524 2	0000.200	0	0	1	2	2	2	2
34301	D	MONOCLBENZ EPA524.2	CBENZEPA	2249		0000.200	0	0	2	2	3	3	3
34301	C	CHLOROBENZENE TOTAL	CL-BENZ	5833	E524 2	0000.200	0	0	1	2	2	2	2
34301	Z	CHLOROBENZENE	NAWQAVOC	5916		0000.000	3	3	3	3	3	3	3
34311	A	CHLOROETHANE, TOTAL	CH2CLCH3	1016	O311583	0003.000	0	0	0	2	2	2	2
34311	B	CHLOROETHANE, TOTAL	CH2CLCH3	1292	E524 2	0000.200	0	0	1	2	2	2	2
34311	C	CHLOROETHANE TOTAL	CH2CLCH3	5805	E524 2	0000.200	0	0	1	2	2	2	2
34311	Z	CHLOROETHANE	NAWQAVOC	5867		0000.000	3	3	3	3	3	3	3
34320	A	CHRYSENE, TOTAL	CHRY	1082	O311688	0010.000	0	0	0	1	2	2	2
34323	A	CHRYSENE, BTM	B-CHRY	1128	O511683	0400.000	0	0	0	0	2	2	2
34336	A	DIETHYL PHTHALATE, T	DIETPT	1089	O311688	0005.000	0	0	0	1	2	2	2
34339	A	DIETPHTH, BTM	B-DIETPT	1144	O511683	0200.000	0	0	0	0	2	2	2
34341	A	DIMETHYL PHTHALATE,T	DIMEPT	1090	O311688	0005.000	0	0	0	1	2	2	2

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
34344	A	DIMETPHTH, BTM	B-DIMEPT	1145	O511683	0200.000	0	0	0	0	2	2	2
34351	D	ENDOSULFAN SO4 WWRE8	ENDOS608	1635	EA60891	0000.600	0	0	1	2	2	2	2
34356	D	ENDOSULFN IIBETAWWR8	BENDO608	1632	EA60891	0000.040	0	2	2	2	2	2	2
34361	D	ENDOSULFAN IALPHAWWR	AENDO608	1627	EA60891	0000.100	0	0	1	2	2	2	2
34366	D	ENDRIN ALDH WWRE608	ENDAL608	1634	EA60891	0000.200	0	0	1	2	2	2	2
34371	A	ETHYLBENZENE, TOTAL	ETH-BENZ	1027	O311583	0003.000	0	0	0	2	2	2	2
34371	B	ETHYLBENZENE, TOTAL	ETH-BENZ	1303	E524 2	0000.200	0	0	1	2	2	2	2
34371	D	ETHLBENZEN EPA524.2	ETBENEPA	2250		0000.200	0	0	2	2	3	3	3
34371	C	ETHYLBENZENE TOTAL	ETH-BENZ	5835	E524 2	0000.200	0	0	1	2	2	2	2
34371	Z	ETHYLBENZENE	NAWQAVOC	5918		0000.000	3	3	3	3	3	3	3
34376	A	FLUORANTHENE, TOTAL	FLANTE	1096	O311688	0005.000	0	0	0	1	2	2	2
34379	A	FLUORANTHENE, BTM	B-FLANTE	1151	O511683	0200.000	0	0	0	0	2	2	2
34381	A	FLUORENE, TOTAL	FLUO	1095	O311688	0005.000	0	0	0	1	2	2	2
34384	A	FLUORENE, BTM	B-FLUO	1150	O511683	0200.000	0	0	0	0	2	2	2
34386	A	HEXACHLOROCYCLOOPEN, T	HXCPED	1099	O311688	0005.000	0	0	0	1	2	2	2
34389	A	HEXCLPENTDI, BTM	B-HXCPED	1154	O511683	0200.000	0	0	0	0	2	2	2
34396	A	HEXACHLOROETHANE, T.	HXCLET	1100	O311688	0005.000	0	0	0	1	2	2	2
34396	Z	HEXACHLOROETHANE	NAWQAVOC	5942		0000.000	3	3	3	3	3	3	3
34396	Y	HEXACHLOROETHANE	NAWQAVOC	5978		0000.000	3	3	3	3	3	3	3
34399	A	HEXCLETHANE, BTM	B-HXCLET	1155	O511683	0200.000	0	0	0	0	2	2	2
34403	A	INDENO(1,2,3)PYREN, T	INDPYR	1101	O311688	0010.000	0	0	0	1	2	2	2
34406	A	INDENOPYRENE, BTM	B-INDPYR	1156	O511683	0400.000	0	0	0	0	2	2	2
34408	A	ISOPHORONE, TOTAL	ISOPHO	1102	O311688	0005.000	0	0	0	1	2	2	2
34411	A	ISOPHORONE, BTM	B-ISOPHO	1157	O511683	0200.000	0	0	0	0	2	2	2
34413	A	METHYLBROMIDE, TOTAL	CH3-BR	1028	O311583	0003.000	0	0	0	2	2	2	2
34413	B	METHYLBROMIDE, TOTAL	CH3-BR	1304	E524 2	0000.200	0	0	1	2	2	2	2
34413	C	METHYLBROMIDE TOTAL	CH3-BR	5804	E524 2	0000.200	0	0	1	2	2	2	2
34413	Z	BROMOMETHANE	NAWQAVOC	5866		0000.000	3	3	3	3	3	3	3
34418	A	CHLOROMETHANE	CHLOMETH	1281	O311583	0003.000	0	0	0	2	2	2	2
34418	B	CHLOROMETHANE, TOT	CHLOMETH	1318	E524 2	0000.200	0	0	1	2	2	2	2
34418	C	CHLOROMETHANE TOT	CHLOMETH	5802	E524 2	0000.200	0	0	1	2	2	2	2
34418	Z	CHLOROMETHANE	NAWQAVOC	5864		0000.000	3	3	3	3	3	3	3
34423	A	METHYLENE CHLORIDE, T	CH2CL	1029	O311583	0003.000	0	0	0	2	2	2	2
34423	B	METHYLENE CHLORIDE, T	CH2CL	1305	E524 2	0000.200	0	0	1	2	2	2	2
34423	D	METHLENE CLEPA 524.2	MECL2EPA	2234		0000.200	0	0	2	2	3	3	3
34423	C	METHYLENE CHLORIDE T	CH2CL	5808	E524 2	0000.200	0	0	1	2	2	2	2
34423	Z	METHYLENE CHLORIDE	NAWQAVOC	5878		0000.000	3	3	3	3	3	3	3
34428	A	N-NITROSODI-N-PROP, T	NIPRAM	1107	O311688	0005.000	0	0	0	1	2	2	2
34431	A	NITDIPROPAMINE, BTM	B-DIPRAM	1162	O511683	0200.000	0	0	0	0	2	2	2
34433	A	N-NITROSODIPHENYLAT, T	NIPHAM	1106	O311688	0005.000	0	0	0	1	2	2	2
34436	A	NITDIPHENAMINE, BTM	B-NIPHAM	1161	O511683	0200.000	0	0	0	0	2	2	2
34438	A	NITROSODIMETHLYAMI, T	NIMEAM	1105	O311688	0005.000	0	0	0	1	2	2	2
34441	A	NITDIMETAMINE, BTM	B-NIMEAM	1160	O511683	0200.000	0	0	0	0	2	2	2
34445	A	NAPHTHALENE, BTM	B-NAPHT	1158	O511683	0200.000	0	0	0	0	2	2	2
34447	A	NITROBENZENE, TOTAL	NIBZ	1104	O311688	0005.000	0	0	0	1	2	2	2
34450	A	NITROBENZENE, BTM	B-NIBZ	1159	O511683	0200.000	0	0	0	0	2	2	2
34452	A	CHLORO-METHYLPHENO, T	CH-ME-PH	1055	O311688	0030.000	0	0	0	1	2	2	2
34455	A	CHLO-METH PHEN T-BTM	B-CHMEPH	1044	O511683	0600.000	0	0	0	0	2	2	2

Appendix C: Parameter Method Codes

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
34457	A	AROCHLOR 1242, DIS,	PCB1242D	0775	O110483	0000.100	0	0	1	2	2	2	2
34458	A	AROCHLOR 1242, SUS.	PCB1242S	0776	O710483	0000.100	0	0	1	2	2	2	2
34461	A	PHENANTHRENE, TOTAL	PHANTE	1108	O311688	0005.000	0	0	0	1	2	2	2
34464	A	PHENANTHRENE, BTM	B-PHANTE	1163	O511683	0200.000	0	0	0	0	2	2	2
34469	A	PYRENE, TOTAL	PYRE	1109	O311688	0005.000	0	0	0	1	2	2	2
34472	A	PYRENE, BTM	B-PYRE	1164	O511683	0200.000	0	0	0	0	2	2	2
34475	A	TETRACHLOROETHYLEN,T	C2CL4	1031	O311583	0003.000	0	0	0	2	2	2	2
34475	B	TETRACHLOROETHYLEN,T	C2CL4	1307	E524 2	0000.200	0	0	1	2	2	2	2
34475	D	TETRACLETHE EPA524.2	CLAETEPA	2247		0000.200	0	0	2	2	3	3	3
34475	C	TETRACHLOROETHYLEN T	C2CL4	5829	E524 2	0000.200	0	0	1	2	2	2	2
34475	Z	TETRACHLOROETHENE	NAWQAVOC	5911		0000.000	3	3	3	3	3	3	3
34488	A	TRICHLOROFLUOROMET,T	CCL3F	1036	O311583	0003.000	0	0	0	2	2	2	2
34488	B	TRICHLOROFLUOROMET,T	CCL3F	1312	E524 2	0000.200	0	0	1	2	2	2	2
34488	C	TRICHLOROFLUOROMET T	CCL3F	5806	E524 2	0000.200	0	0	1	2	2	2	2
34488	Z	TRICHLOROFLUOROMETH	NAWQAVOC	5869		0000.000	3	3	3	3	3	3	3
34496	A	1,1-DICHLOROETHANE,T	CL2C-C	1021	O311583	0003.000	0	0	0	2	2	2	2
34496	B	1,1-DICHLOROETHANE,T	CL2C-C	1297	E524 2	0000.200	0	0	1	2	2	2	2
34496	C	1 1-DICHLOROETHANE T	CL2C-C	5811	E524 2	0000.200	0	0	1	2	2	2	2
34496	Z	1 1-DICHLOROETHANE	NAWQAVOC	5882		0000.000	3	3	3	3	3	3	3
34501	A	1,1-DICLORETHYLEN,T	CL2C=C	1023	O311583	0003.000	0	0	0	2	2	2	2
34501	B	1,1-DICLORETHYLEN,T	CL2C=C	1299	E524 2	0000.200	0	0	1	2	2	2	2
34501	D	IIDICLEATHER EPA524.2	IICCLEEPA	2233		0000.200	0	0	2	2	3	3	3
34501	C	1 1-DICLORETHYLEN T	CL2CC	5807	E524 2	0000.200	0	0	1	2	2	2	2
34501	Z	1 1-DICLORETHENE	NAWQAVOC	5872		0000.000	3	3	3	3	3	3	3
34506	A	1,1,1-TRICHLOROETH,T	CCL3-CH3	1033	O311583	0003.000	0	0	0	2	2	2	2
34506	B	1,1,1-TRICHLOROETH,T	CCL3-CH3	1309	E524 2	0000.200	0	0	1	2	2	2	2
34506	D	TRICLETHANE EPA524.2	TCETHEPA	2238		0000.200	0	0	2	2	3	3	3
34506	C	1 1 1-TRICHLOROETH T	CCL3-CH3	5816	E524 2	0000.200	0	0	1	2	2	2	2
34506	Z	111-TRICHLOROETHANE	NAWQAVOC	5894		0000.000	3	3	3	3	3	3	3
34511	A	1,1,2-TRICHLOROETH,T	CCL2-CCL	1034	O311583	0003.000	0	0	0	2	2	2	2
34511	B	1,1,2-TRICHLOROETH,T	CCL2-CCL	1310	E524 2	0000.200	0	0	1	2	2	2	2
34511	D	TRICLETHANE EPA524.2	CL3ETEPA	2246		0000.200	0	0	2	2	3	3	3
34511	C	1 1 2-TRICHLOROETH T	CCL2-CCL	5828	E524 2	0000.200	0	0	1	2	2	2	2
34511	Z	112-TRICHLOROETHANE	NAWQAVOC	5910		0000.000	3	3	3	3	3	3	3
34516	A	1,1,2,2-TETRCHLORO,T	(CCL2H)2	1030	O311583	0003.000	0	0	0	2	2	2	2
34516	B	1,1,2,2-TETRCHLORO,T	(CCL2H)2	1306	E524 2	0000.200	0	0	1	2	2	2	2
34516	C	1 1 2 2-TETRCHLORO T	(CCL2H)2	5840	E524 2	0000.200	0	0	1	2	2	2	2
34516	Z	1122TETRACHLOROETHAN	NAWQAVOC	5925		0000.000	3	3	3	3	3	3	3
34521	A	BENZO(GHI)PERYLENE,T	BZPRY	1074	O311688	0010.000	0	0	0	1	2	2	2
34524	A	BENZOPERYLENE, BTM	B-BZPRY	1120	O511683	0400.000	0	0	0	0	2	2	2
34526	A	BENZO(A)ANTHRACENE,T	BZ ANTR	1070	O311688	0010.000	0	0	0	1	2	2	2
34529	A	BENZOANTHRACEN, BTM	B-BZANTR	1116	O511683	0400.000	0	0	0	0	2	2	2
34536	A	1,2-DICHLOROBENZEN,T	12DCBZ	1085	O311688	0005.000	0	0	0	1	2	2	2
34536	B	1,2-DICHLOROBENZEN,T	12DCBZ	1314	E524 2	0000.200	0	0	1	2	2	2	2
34536	C	1,2-DICHLOROBENZEN,T	12DCBZ	1320	O311583	0003.000	0	0	1	2	2	2	2
34536	E	12DICLBENZ 524.2	12CLBEPA	2256		0000.200	0	0	2	2	3	3	3
34536	D	1 2-DICHLOROBENZEN T	12DCBZ	5852	O311583	0000.200	0	0	1	2	2	2	2
34536	Z	1 2-DICHLOROBENZENE	NAWQAVOC	5940		0000.000	3	3	3	3	3	3	3

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
34539	A	1-2 DICHLORBZ, BTM	B-12DCBZ	1140	O511683	0200.000	0	0	0	0	2	2	2
34541	A	1,2-DICHLOROPROPAN,T	CLCCCL-C	1025	O311583	0003.000	0	0	0	2	2	2	2
34541	B	1,2-DICHLOROPROPAN,T	CLCCCL-C	1301	E524 2	0000.200	0	0	1	2	2	2	2
34541	D	DICLPROPANE EPA524.2	DCPROEPA	2243		0000.200	0	0	2	2	3	3	3
34541	C	1 2-DICHLOROPROPAN T	CLCCCL-C	5822	E524 2	0000.200	0	0	1	2	2	2	2
34541	Z	1 2-DICHLOROPROPANE	NAWQAVOC	5901		0000.000	3	3	3	3	3	3	3
34546	A	12TRANSDICL-ETHYLENE	CLC=CCL	1024	O311583	0003.000	0	0	0	2	2	2	2
34546	B	12TRANSDICL-ETHYLENE	CLC=CCL	1300	E524 2	0000.200	0	0	1	2	2	2	2
34546	D	TRDICLETHE EPA524.2	TRDCEEPA	2235		0000.200	0	0	2	2	3	3	3
34546	C	12TRANSDICL-ETHYLENE	CLCCCL	5809	E524 2	0000.200	0	0	1	2	2	2	2
34546	Z	t-1 2-DICHLOROETHENE	NAWQAVOC	5880		0000.000	3	3	3	3	3	3	3
34551	A	1,2,4-TRICHLOROBEN,T	TRIBZ	1111	O311688	0005.000	0	0	0	1	2	2	2
34551	C	124-TRICHLOROBENZENE	124TCBNZ	1673		0000.200	0	0	1	2	2	2	2
34551	B	124-TRICHLOROBENZENE	124TCBNZ	1674		0003.000	0	0	1	2	2	2	2
34551	E	TRICLBENZ EPA524.2	CL3BZEP	2257		0000.200	0	0	2	2	3	3	3
34551	D	124-TRICHLOROBENZENE	124TCBNZ	5854		0000.200	0	0	1	2	2	2	2
34551	Z	124-TRICHLOROBENZENE	NAWQAVOC	5946		0000.000	3	3	3	3	3	3	3
34554	A	TRICLBENZENE, BTM	B-TRIBZ	1166	O511683	0200.000	0	0	0	0	2	2	2
34556	A	DIBENZANTHRACENE, T	DIBZAN	1083	O311688	0010.000	0	0	0	1	2	2	2
34559	A	DIBENZANTHRA, BTM	B-DIBZAN	1129	O511683	0400.000	0	0	0	0	2	2	2
34561	A	1,3-DICHLOROPROPEN,T	CLCC-CCL	1026	O311583	0003.000	0	0	0	2	2	2	2
34561	B	1,3-DICHLOROPROPEN,T	CLCC-CCL	1302	E524 2	0000.200	0	0	1	2	2	2	2
34566	A	1,3-DICHLOROBENZEN,T	13DCBZ	1086	O311688	0005.000	0	0	0	1	2	2	2
34566	B	1,3-DICHLOROBENZEN,T	13DCBZ	1315	E524 2	0000.200	0	0	1	2	2	2	2
34566	C	1,3-DICHLOROBENZEN,T	13DCBZ	1321	O311583	0003.000	0	0	1	2	2	2	2
34566	D	1 3-DICHLOROBENZEN T	13DCBZ	5849	E524 2	0000.200	0	0	1	2	2	2	2
34566	Z	1 3-DICHLOROBENZENE	NAWQAVOC	5936		0000.000	3	3	3	3	3	3	3
34569	A	1-3 DICHLORBZ, BTM	B-13DCBZ	1141	O511683	0200.000	0	0	0	0	2	2	2
34571	A	1,4-DICHLOROBENZEN,T	14DCBZ	1087	O311688	0005.000	0	0	0	1	2	2	2
34571	B	1,4-DICHLOROBENZEN,T	14DCBZ	1316	E524 2	0000.200	0	0	1	2	2	2	2
34571	C	1,4-DICHLOROBENZEN,T	14DCBZ	1322	O311583	0003.000	0	0	1	2	2	2	2
34571	E	14DICLBENZ EPA524.2	14CLBEPA	2255		0000.200	0	0	2	2	3	3	3
34571	D	1 4-DICHLOROBENZEN T	14DCBZ	5850	E524 2	0000.200	0	0	1	2	2	2	2
34571	Z	1 4-DICHLOROBENZENE	NAWQAVOC	5938		0000.000	3	3	3	3	3	3	3
34574	A	1-4 DICHLORBZ, BTM	B-14DCBZ	1142	O511683	0200.000	0	0	0	0	2	2	2
34576	A	2-CL-ETHYLVINYLETHER	CL-E-V-E	1017	O311583	0003.000	0	0	0	2	2	2	2
34576	B	2-CL-ETHYLVINYLETHER	CL-E-V-E	1293	E524 2	0000.200	0	0	1	2	2	2	2
34576	C	2CHLOROETHYLVINYLET	2CEVE	1658		0001.000	0	0	1	2	2	2	2
34581	A	2-CHLORONAPHTHALEN,T	CLNPH	1080	O311688	0005.000	0	0	0	1	2	2	2
34584	A	CHLORONAPHTH, BTM	B-CLNPH	1126	O511683	0200.000	0	0	0	0	2	2	2
34586	A	2-CHLOROPHENOL, TOT.	CH-PH	1056	O311688	0005.000	0	0	0	1	2	2	2
34589	A	CHLOR-PHENO, T-BTM	B-CH-PH	1045	O511683	0200.000	0	0	0	0	2	2	2
34591	A	2-NITROPHENOL, TOTAL	2-N-PH	1062	O311688	0005.000	0	0	0	1	2	2	2
34594	A	2-NITROPHEN, T-BTM	B-2NPH	1050	O511683	0200.000	0	0	0	0	2	2	2
34596	A	DI-N-OCTYLPHTHALAT,T	OCTPT	1093	O311688	0010.000	0	0	0	1	2	2	2
34599	A	DI-N-OCTYLPHTH, BTM	B-OCTPT	1148	O511683	0400.000	0	0	0	0	2	2	2
34601	A	2,4-DICHLOROPHENOL,T	DI-CH-PH	1057	O311688	0005.000	0	0	0	1	2	2	2
34604	A	DICHPHENOL, T-BTM	B-DICHPH	1046	O511683	0200.000	0	0	0	0	2	2	2

Appendix C: Parameter Method Codes

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
34606	A	2,4-DIMETHYLPHENOL,T	DI-ME-PH	1059	O311688	0005.000	0	0	0	1	2	2	2
34608	A	2,4-DP, SUSPENDED	2,4-DP S	0486	O710583	0000.010	0	1	2	2	2	2	2
34609	A	2,4-DP, BTM MATERIAL	24DP BTM	0403	O510583	0000.100	0	0	1	2	2	2	2
34609	B	DIMET PHENOL, T-BTM	B-DIMEPH	1047	O511683	0200.000	0	0	0	0	2	2	2
34611	A	2,4-DINITROTOLUENE,T	24DNT	1091	O311688	0005.000	0	0	0	1	2	2	2
34614	A	2-4 DINITTOL, BTM	B-24DNT	1146	O511683	0200.000	0	0	0	0	2	2	2
34616	A	2,4-DINITROPHENOL, T	DI-N-PH	1061	O311688	0020.000	0	0	0	1	2	2	2
34619	A	DIN PHENOL, T-BTM	B-DINPH	1049	O511683	0600.000	0	0	0	0	2	2	2
34621	A	2,4,6-TRICHLOROPHE, T	TRICHPH	1058	O311688	0020.000	0	0	0	1	2	2	2
34624	A	TRICHLOROPHENOL T-BTM	B-TRICPH	1054	O511683	0600.000	0	0	0	0	2	2	2
34626	A	2,6-DINITROTOLUENE,T	26DNT	1092	O311688	0005.000	0	0	0	1	2	2	2
34629	A	2-6 DINITTOL, BTM	B-26DNT	1147	O511683	0200.000	0	0	0	0	2	2	2
34631	A	3,3-DICHLOROBENZID,T	33DCBZ	1088	O311688	0020.000	0	0	0	1	2	2	2
34634	A	3-3 DICHLBZID, BTM	B-33DCBZ	1143	O511683	0010.000	0	0	0	0	2	2	2
34636	A	4-BROMOPHENYL PHEN,T	BRPHPH	1079	O311688	0005.000	0	0	0	1	2	2	2
34639	A	BROMOPHENPHEN, BTM	B-BRPHPH	1125	O511683	0200.000	0	0	0	0	2	2	2
34641	B	4-CHLOROPHENYL ETH,T	CLPHPH	1081	O311688	0005.000	0	0	0	1	2	2	2
34644	A	CHLORPHENPHEN, BTM	B-CLPHPH	1127	O511683	0200.000	0	0	0	0	2	2	2
34646	A	4-NITROPHENOL, TOTAL	4-N-PH	1063	O311688	0030.000	0	0	0	1	2	2	2
34649	A	4-NITROPHEN, T-BTM	B-4NPH	1051	O511683	0600.000	0	0	0	0	2	2	2
34653	D	DDE P P- D LE	DDE DL	4012		0000.000	1	2	2	2	1	1	1
34653	E	DDE P P- D FE	DDE DF	4212		0000.000	1	2	2	2	1	1	1
34657	A	DINITROMETHYLPHENO,T	DI-N-MEP	1060	O311688	0030.000	0	0	0	1	2	2	2
34660	A	DIN MET PHEN, T-BTM	B-DINMEP	1048	O511683	0600.000	0	0	0	0	2	2	2
34662	A	AROCHLOR 1221, DIS.	PCB1221D	0783	O110483	0000.100	0	0	1	2	2	2	2
34663	A	AROCHLOR 1221, SUS.	PCB1221S	0784	O710483	0000.100	0	0	1	2	2	2	2
34665	A	AROCHLOR 1232, DIS.	PCB1232D	0779	O110483	0000.100	0	0	1	2	2	2	2
34666	A	AROCHLOR 1232, SUS.	PCB1232S	0780	O710483	0000.100	0	0	1	2	2	2	2
34668	A	DICHLORODIFLUOROME,T	CCL2F2	1020	O311583	0003.000	0	0	0	2	2	2	2
34668	B	DICHLORODIFLUOROME,T	CCL2F2	1296	E524 2	0000.200	0	0	1	2	2	2	2
34668	C	DICHLORODIFLUOROME T	CCL2F2	5801	E524 2	0000.200	0	0	1	2	2	2	2
34668	Z	DICHLORODIFLUOROMETH	NAWQAVOC	5863		0000.000	3	3	3	3	3	3	3
34671	A	AROCHLOR 1016, TOT	PCB1016C	0789	O310483	0000.100	0	0	1	2	2	2	2
34671	B	AROCHLOR 1016, TOT.	PCB1016T	0809	O310483	0000.100	0	0	1	2	2	2	2
34671	D	AROCLOR-1016 WWRE8	1016-608	1641	EA60891	0000.100	0	0	1	2	2	2	2
34672	A	AROCHLOR 1016, DIS.	PCB1016D	0787	O110483	0000.100	0	0	1	2	2	2	2
34673	A	AROCHLOR 1016, SUS.	PCB1016S	0788	O710483	0000.100	0	0	1	2	2	2	2
34675	A	2,3,7,8-TETRACHLOR,T	CLBZDX	1110	O311688	0001.000	0	0	0	1	2	2	2
34678	A	TETCLBENZDIOXN, BTM	B-CLBZDX	1165	O511683	0010.000	0	0	0	0	2	2	2
34694	A	PHENOL, TOTAL	PHENOL T	1065	O311688	0005.000	0	0	0	1	2	2	2
34695	A	PHENOL, T-BTM	B-PHENOL	1053	O511683	0200.000	0	0	0	0	2	2	2
34696	A	NAPHTHALENE, TOTAL	NAPHT	1103	O311688	0005.000	0	0	0	1	2	2	2
34696	C	NAPHTHALENE	NAPHTH	1677		0000.200	0	0	1	2	2	2	2
34696	B	NAPHTHALENE	NAPHTH	1678		0003.000	0	0	1	2	2	2	2
34696	D	NAPHTHALENE	NAPHTH	5856		0000.200	0	0	1	2	2	2	2
34696	Z	NAPHTHALENE	NAWQAVOC	5948		0000.000	3	3	3	3	3	3	3
34699	A	TRANS13DICHLOROPROPE	CLCC-CCL	1324	O311583	0003.000	0	0	1	2	2	2	2
34699	B	TRANS13DICHLOROPROPE	CLCC-CCL	1327	E524 2	0000.200	0	0	1	2	2	2	2

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
34699	C	TRANS13DICHLOROPROPE	CLCC-CCL	5827	0524 2	0000.200	0	0	1	2	2	2	2
34699	Z	T-13-DICHLOROPROPENE	NAWQAVOC	5908		0000.000	3	3	3	3	3	3	3
34704	A	CIS13DICHLOROPROPENT	CLCC-CCL	1323	0311583	0003.000	0	0	1	2	2	2	2
34704	B	CIS13DICHLOROPROPENT	CLCC-CCL	1326	0524 2	0000.200	0	0	1	2	2	2	2
34704	C	CIS13DICHLOROPROPENT	CLCC-CCL	5825	0524 2	0000.200	0	0	1	2	2	2	2
34704	Z	C-13-DICHLOROPROPENE	NAWQAVOC	5905		0000.000	3	3	3	3	3	3	3
34790	A	ALUMINUM ICPTBM<63FS	ALB<63FS	1736	GE01090	0000.005	1	2	2	2	2	2	2
34792	A	ALUMINUM ICP<63LS GD	GEO-I-AL	1401	G5ICP87	0000.005	0	1	2	2	2	2	2
34795	D	ANTIMONY HA TBM<63FS	SBB<63FS	1776	GD	0000.100	0	0	1	1	2	2	2
34797	A	ANTIMONY ICP<63LS GD	GEO-I-SB	1432	G5ICP87	0020.000	0	0	0	0	2	2	2
34800	D	ARSENIC HA TBM<63FS	ASB<63FS	1775	GA02090	0000.100	0	0	1	2	2	2	2
34801	A	AS BED MAT <180 UGG	AS BTMHD	2001		0000.100	0	0	1	2	2	2	2
34802	A	ARSENIC ICP <63LS GD	GEO-I-AS	1410	G5ICP87	0010.000	0	0	0	0	2	2	2
34805	A	BARIUM ICP TBM<63FS	BAB<63FS	1745	GE01090	0001.000	0	0	0	1	2	2	2
34807	A	BARIUM ICP <63LS GD	GEO-I-BA	1412	G5ICP87	0001.000	0	0	0	1	2	2	2
34810	A	BERYLLIUMICPTBM<63FS	BEB<63FS	1746	GE01090	0001.000	0	0	0	1	2	2	2
34812	A	BERYLLIUMICP<63LS GD	GEO-I-BE	1413	G5ICP87	0001.000	0	0	0	1	2	2	2
34816	A	BISMUTH ICP TBM<63FS	BIB<63FS	1747	GE01090	0010.000	0	0	0	0	1	2	2
34817	A	BISMUTH ICP <63LS GD	GEO-I-BI	1414	G5ICP87	0010.000	0	0	0	0	2	2	2
34825	B	CADIMUM GF TBM<63FS	CDB<63FS	1773	GD	0000.100	0	0	1	2	2	2	2
34827	A	CADMUM ICP <63LS GD	GEO-I-CD	1415	G5ICP87	0002.000	0	0	0	1	2	2	2
34830	A	CALCIUM ICP TBM<63FS	CAB<63FS	1737	GE01090	0000.005	1	2	2	2	2	2	2
34832	A	CALCIUM ICP <63LS GD	GEO-I-CA	1402	G5ICP87	0000.005	0	1	2	2	2	2	2
34835	A	CERIUM ICP TBM<63FS	CEB<63FS	1748	GE01090	0004.000	0	0	0	1	2	2	2
34837	A	CERIUM ICP <63LS GD	GEO-I-CE	1416	G5ICP87	0004.000	0	0	0	1	2	2	2
34840	A	CHROMIUM ICPTBM<63FS	CRB<63FS	1750	GE01090	0001.000	0	0	0	1	2	2	2
34842	A	CHROMIUM ICP<63LS GD	GEO-I-CR	1418	G5ICP87	0001.000	0	0	0	1	2	2	2
34845	A	COBALT ICP TBM<63FS	COB<63FS	1749	GE01090	0001.000	0	0	0	1	2	2	2
34847	A	COBALT ICP <63LS GD	GEO-I-CO	1417	G5ICP87	0001.000	0	0	0	1	2	2	2
34850	A	COPPER ICP TBM<63FS	CUB<63FS	1751	GE01090	0001.000	0	0	0	1	2	2	2
34852	A	COPPER ICP <63LS GD	GEO-I-CU	1419	G5ICP87	0001.000	0	0	0	1	2	2	2
34855	A	EUROPIUM ICPTBM<63FS	EUB<63FS	1752	GE01090	0002.000	0	0	0	1	2	2	2
34857	A	EUROPIUM ICP<63LS GD	GEO-I-EU	1420	G5ICP87	0002.000	0	0	0	1	2	2	2
34860	A	GALLIUM ICP TBM<63FS	GAB<63FS	1753	GE01090	0004.000	0	0	0	1	2	2	2
34862	A	GALLIUM ICP <63LS GD	GEO-I-GA	1421	G5ICP87	0004.000	0	0	0	1	2	2	2
34867	A	GERMANM ICP <63LS GD	GEO-I-GE	1423	G5ICP87	0020.000	0	0	0	0	2	2	2
34870	A	GOLD ICP ICPTBM<63FS	AUB<63FS	1744	GE01090	0008.000	0	0	0	1	2	2	2
34872	A	GOLD ICP <63LS GD	GEO-I-AU	1411	G5ICP87	0008.000	0	0	0	1	2	2	2
34875	A	HOLMIU ICP TBM<63FS	HOB<63FS	1754	GE01090	0004.000	0	0	0	1	2	2	2
34877	A	HOLMIUM ICP <63LS GD	GEO-I-HO	1424	G5ICP87	0004.000	0	0	0	1	2	2	2
34880	A	IRON ICP TBM<63UFS	FEB<63FS	1738	GE01090	0000.005	1	2	2	2	2	2	2
34882	A	IRON ICP <63LS GD	GEO-I-FE	1403	G5ICP87	0000.005	0	1	2	2	2	2	2
34885	A	LANTHNM ICP TBM<63FS	LAB<63FS	1755	GE01090	0002.000	0	0	0	1	2	2	2
34887	A	LANTHNM ICP <63LS GD	GEO-I-LA	1422	G5ICP87	0002.000	0	0	0	1	2	2	2
34890	A	LEAD ICP TBM<63FS	PBB<63FS	1762	GE01090	0004.000	0	0	0	1	2	2	2
34892	A	LEAD ICP <63LS GD	GEO-I-PB	1431	G5ICP87	0004.000	0	0	0	1	2	2	2
34895	A	LITHIUM ICP TBM<63FS	LIB<63FS	1756	GE01090	0002.000	0	0	0	1	1	1	2
34897	A	LITHIUM ICP <63LS GD	GEO-I-LI	1425	G5ICP87	0002.000	0	0	0	1	2	2	2

Appendix C: Parameter Method Codes

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A B C D E F G
34900	A	MAGNESUM ICPTBM<63FS	MGB<63FS	1740	GE01090	0000.005	1 2 2 2 2 2 2
34902	A	MAGNESUM ICP<63LS GD	GEO-I-MG	1405	G5ICP87	0000.005	1 2 2 2 2 2 2
34905	A	MANGNSE ICP TBM<63FS	MNB<63FS	1757	GE01090	0004.000	0 0 0 1 2 2 2
34907	A	MANGNSE ICP <63LS GD	GEO-I-MN	1426	G5ICP87	0004.000	0 0 0 1 2 2 2
34910	C	MERCURY CV TBM<63FS	HGB<63FS	1774	GD	0000.020	0 1 2 3 3 3 3
34912	A	GD AAS CV HG	GEO-V-HG	1453	G5AAV87	0000.020	0 1 2 2 2 2 2
34915	A	MOLYBDM ICP TBM<63FS	MOB<63FS	1758	GE01090	0002.000	0 0 0 1 2 2 2
34917	A	MOLYBDM ICP <63LS GD	GEO-I-MO	1427	G5ICP87	0002.000	0 0 0 1 2 2 2
34920	A	NEODYMM ICP TBM<63FS	NDB<63FS	1760	GE01090	0004.000	0 0 0 1 2 2 2
34922	A	NEODYMM ICP <63LS GD	GEO-I-ND	1429	G5ICP87	0004.000	0 0 0 1 2 2 2
34925	A	NICKEL ICP TBM<63FS	NIB<63FS	1761	GE01090	0002.000	0 0 0 1 2 2 2
34927	A	NICKEL ICP <63LS GD	GEO-I-NI	1430	G5ICP87	0002.000	0 0 0 1 2 2 2
34930	A	NOBIUM ICP TBM<63FS	NBB<63FS	1759	GE01090	0004.000	0 0 0 1 2 2 2
34932	A	NOBIUM ICP <63LS GD	GEO-I-NB	1428	G5ICP87	0004.000	0 0 0 1 2 2 2
34935	A	PHOSPHS ICP TBM<63FS	P-B<63FS	1742	GE01090	0000.005	1 2 2 2 2 2 2
34937	A	PHOSPHS ICP <63LS GD	GEO-I-P	1407	G5ICP87	0000.005	1 2 2 2 2 2 2
34940	A	POTASSIM ICPTBM<63FS	K-B<63FS	1739	GE01090	0000.050	0 1 2 2 2 2 2
34942	A	POTASSIM ICP<63LS GD	GEO-I-K	1404	G5ICP87	0000.050	0 1 2 2 2 2 2
34945	A	SCANDIM ICP TBM<63FS	SCB<63FS	1763	GE01090	0002.000	0 0 0 1 2 2 2
34947	A	SCANDIM ICP <63LS GD	GEO-I-SC	1433	G5ICP87	0002.000	0 0 0 1 2 2 2
34950	D	SELENIUM HA TBM<63FS	SEB<63FS	1777	GA01090	0000.100	0 0 1 2 2 2 2
34951	A	SE BED MAT <180 UGG	SE BTMDG	2000		0000.100	0 0 1 2 2 2 2
34952	A	GD AAS HYD SE	GEO-H-SE	1455	G5AAH87	0000.100	0 0 1 2 2 2 2
34955	B	SILVER GF TBM<63FS	AGB<63FS	1772	GD	0000.100	0 0 1 2 2 2 2
34957	A	SILVER ICP <63LS GD	GEO-I-AG	1409	G5ICP87	0002.000	0 0 0 1 2 2 2
34960	A	SODIUM ICP TBM<63FS	NAB<63FS	1741	GE01090	0000.005	1 2 2 2 2 2 2
34962	A	SODIUM ICP <63LS GD	GEO-I-NA	1406	G5ICP87	0000.005	1 2 2 2 2 2 2
34965	A	STRONTM ICP TBM<63FS	SRB<63FS	1765	GE01090	0002.000	0 0 0 1 2 2 2
34967	A	STRONTM ICP <63LS GD	GEO-I-SR	1435	G5ICP87	0002.000	0 0 0 1 2 2 2
34970	F	SULFUR IR TBM<63FS	S-B<63FS	1780	GN01090	0000.050	0 1 2 3 3 3 3
34972	A	GD-SULFUR	GEO-S	1460	G5CMB87	0000.010	0 1 2 2 2 2 2
34975	A	TANTALUM ICPTBM<63FS	TAB<63FS	1766	GE01090	0040.000	0 0 0 0 1 2 2
34977	A	TANTALUM ICP<63LS GD	GEO-I-TA	1436	G5ICP87	0040.000	0 0 0 0 2 2 2
34980	A	THORIUM ICP TBM<63FS	THB<63FS	1767	GE01090	0004.000	0 0 0 1 2 2 2
34980	E	THORIUM NA TBM<63FS	THO<63FS	1779	GD	0001.000	0 0 1 2 2 2 2
34982	A	THORIUM ICP <63LS GD	GEO-I-TH	1437	G5ICP87	0004.000	0 0 0 1 2 2 2
34985	A	TIN ICP TBM T<63UFS	SNB<63FS	1764	GE01090	0010.000	0 0 0 0 1 2 2
34987	A	TIN ICP <63LS GD	GEO-I-SN	1434	G5ICP87	0005.000	0 0 0 1 2 2 2
34992	A	TITANIUM ICP<63LS GD	GEO-I-TI	1408	G5ICP87	0000.005	1 2 2 2 2 2 2
34997	A	TUNGSTEN ICP<63LS GD	GEO-I-W	1440	G5ICP87	0010.000	0 0 0 0 2 2 2
35000	E	URANIUM NA TBM<63FS	U-B<63FS	1778	GD	0000.050	0 1 2 2 2 2 2
35002	A	URANIUM ICP <63LS GD	GEO-I-U	1438	G5ICP87	0100.000	0 0 0 0 0 2 2
35005	A	VANADIUM ICPTBM<63FS	V-B<63FS	1768	GE01090	0002.000	0 0 0 1 2 2 2
35007	A	VANADIUM ICP<63LS GD	GEO-I-V	1439	G5ICP87	0002.000	0 0 0 1 2 2 2
35010	A	YTTRIUM ICP TBM<63FS	Y-B<63FS	1769	GE01090	0002.000	0 0 0 1 2 2 2
35012	A	YTTRIUM ICP <63LS GD	GEO-I-Y	1441	G5ICP87	0002.000	0 0 0 1 2 2 2
35015	A	YTTERBM ICP TBM<63FS	YBB<63FS	1770	GE01090	0001.000	0 0 0 1 2 2 2
35017	A	YTTERBM ICP <63LS GD	GEO-I-YB	1442	G5ICP87	0001.000	0 0 0 1 2 2 2

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
35020	A	ZINC ICP T BM<63UFS	ZNB<63FS	1771	GE01090	0004.000	0	0	0	1	2	2	2
35022	A	ZINC ICP <63LS GD	GEO-I-ZN	1443	G5ICP87	0004.000	0	0	0	1	2	2	2
35027	A	ZIRCONM ICP <63LS GD	GEO-I-ZR	1444	G5ICP87	0002.000	0	0	0	1	2	2	2
35030	A	BI-SUSP SED-UGG-GD	BI-SUSED	2028		0010.000	0	1	2	2	2	2	2
35031	A	CO-SUSP SED-UGG-GD	CO-SUSED	2030		0001.000	0	1	2	2	2	2	2
35032	A	EU-SUSP SED-UGG-GD	EU-SUSED	2033		0002.000	0	1	2	2	2	2	2
35033	A	GA-SUSP SED-UGG-GD	GA-SUSED	2034		0004.000	0	1	2	2	2	2	2
35035	A	HO-SUSP SED-UGG-GD	HO-SUSED	2035		0004.000	0	1	2	2	2	2	2
35036	A	LA-SUSP SED-UGG-GD	LA-SUSED	2036		0002.000	0	1	2	2	2	2	2
35044	A	SN-SUSP SED-UGG-GD	SN-SUSED	2043		0010.000	0	1	2	2	2	2	2
35050	A	LI-SUSP SED-UGG-GD	LI-SUSED	2037		0002.000	0	1	2	2	2	2	2
35051	A	CE-SUSP SED-UGG-GD	CE-SUSED	2029		0004.000	0	1	2	2	2	2	2
38260	A	MBAS, TOTAL	DETRGNTS	0096	O311183	0000.020	0	1	2	2	2	2	2
38401	A	AMETRYN DISSOLVED	AMETR D	1588	O112192	0000.050	0	1	2	2	2	2	2
38442	A	DICAMBA - DLE	DICAMBA	5426		0000.000	1	2	2	2	2	2	3
38442	B	DICAMBA - DFE	DICAMBA	5626		0000.000	1	2	2	2	2	2	3
38478	A	LINURON - DLE	LINURON	5432		0000.000	1	2	2	2	2	2	3
38478	B	LINURON - DFE	LINURON	5632		0000.000	1	2	2	2	2	2	3
38482	A	MCPA - DLE	MCPA	5433		0000.000	1	2	2	2	2	2	3
38482	B	MCPA - DFE	MCPA	5633		0000.000	1	2	2	2	2	2	3
38487	A	MCPB - DLE	MCPB	5434		0000.000	1	2	2	2	2	2	3
38487	B	MCPB - DFE	MCPB	5634		0000.000	1	2	2	2	2	2	3
38501	A	METHIOCARB - DLE	METHCARB	5436		0000.000	1	2	2	2	2	2	3
38501	B	METHIOCARB - DFE	METHCARB	5636		0000.000	1	2	2	2	2	2	3
38535	A	PROPAZINE DISSOLVED	PROPAZ D	1595	O112192	0000.050	0	1	2	2	2	2	2
38538	A	PROPOXUR - DLE	PROPOXUR	5450		0000.000	1	2	2	2	2	2	3
38538	B	PROPOXUR - DFE	PROPOXUR	5650		0000.000	1	2	2	2	2	2	3
38711	A	BENTAZON - DLE	BENTAZON	5414		0000.000	1	2	2	2	2	2	3
38711	B	BENTAZON - DFE	BENTAZON	5614		0000.000	1	2	2	2	2	2	3
38746	A	2 4 DB - DLE	2 4 DB	5407		0000.000	1	2	2	2	2	2	3
38746	B	2 4 DB - DFE	2 4 DB	5607		0000.000	1	2	2	2	2	2	3
38811	A	FLUOMETURON - DLE	FLUMETRN	5430		0000.000	1	2	2	2	2	2	3
38811	B	FLUOMETURON - DFE	FLUMETRN	5630		0000.000	1	2	2	2	2	2	3
38866	C	OXAMYL EPA 531.1	OXAMYEPA	2225		0005.000	0	0	1	2	2	2	2
38866	A	OXAMYL - DLE	OXAMYL	5441		0000.000	1	2	2	2	2	2	3
38866	B	OXAMYL - DFE	OXAMYL	5641		0000.000	1	2	2	2	2	2	3
38930	A	PICLORAM, BTM. MAT.	PICLOBTM	0750	O510583	0000.100	0	0	1	2	2	2	2
38931	A	DICAMBA, BTM. MAT.	DICAMBTM	0751	O510583	0000.100	0	0	1	2	2	2	2
38932	A	CHLORPYRIFOS, TOTAL	CLPYRTOT	0753	O310483	0000.010	0	1	2	2	2	2	2
38933	A	CHLORPYRIFOS DISS.	CHLPYF-D	1583	O110483	0000.010	1	2	2	2	2	2	2
38933	D	CHLORPYRIFOS D LD	CHLORPDL	4009		0000.000	1	2	2	2	1	1	1
38933	E	CHLORPYRIFOS D LD	CHLORPDF	4209		0000.000	1	2	2	2	1	1	1
39011	A	DISULFOTON	DISULFOT	0592	O310491	0000.010	0	1	2	2	2	2	2
39023	A	PHORATE, TOTAL	PHORAT-T	0593	O310491	0000.010	0	1	2	2	2	2	2
39024	A	PROPANEDIONE WWR	PRPZ TOT	0844	O310691	0000.100	0	0	1	2	2	2	2
39030	C	TRIFLURALIN WWR	TRIFLURA	1332	O310691	0000.100	0	0	1	2	2	2	2
39032	A	PENTACHLOROPHENOL, T	PENCH PH	1064	O311688	0030.000	0	0	0	1	2	2	2
39032	B	PENTACLPHHEPA515.1	PCPEPA	2202		0000.600	1	2	3	3	3	3	3

Appendix C: Parameter Method Codes

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
39034	A	PERTHANE, TOT.	PERTHN T	0348	O310483	0000.100	0	0	1	2	2	2	2
39034	B	PERTHANE, TOT (COMB)	PERTHN C	0761	O420180	0000.100	0	0	1	2	2	2	2
39040	A	DEF, TOTAL	DEF	0802	O310483	0000.010	0	1	2	2	2	2	2
39050	A	DEF IN BOTTOM	DEF BTM	0816	O510483	0000.100	0	0	1	2	2	2	2
39051	A	METHOMYL WWR	METMYL-T	0638	O310790	0000.017	0	0	1	2	2	2	2
39052	A	PROPHAM WWR	PROPHM-T	0637	O310790	0000.015	0	0	1	2	2	2	2
39054	A	SIMETRYN WWR	STYN TOT	0720	O310691	0000.100	0	0	1	2	2	2	2
39055	A	SIMAZINE WWR	SMZN TOT	0719	O310691	0000.100	0	0	1	2	2	2	2
39055	B	SIMAZINE EPA 507	SIMAZEPA	2209		0000.100	1	2	3	3	3	3	3
39056	A	PROMETONE WWR	PTON TOT	0718	O310691	0000.200	0	0	1	2	2	2	2
39057	A	PROMETRYNE WWR	PTYN TOT	0631	O310691	0000.100	0	0	1	2	2	2	2
39061	A	PENTCH PHEN, T-BTM	B-PECHPH	1052	O511683	0600.000	0	0	0	0	2	2	2
39062	D	CHLORDAN-CIS WWR608	C-CHL608	1628	EA60891	0000.100	0	0	1	2	2	2	2
39065	D	CHLORDAN-TRAN WWR608	T-CHL608	1626	EA60891	0000.100	0	0	1	2	2	2	2
39076	A	ALPHA BHC ISOMER BTM	A BHCBTM	0823	O510483	0000.100	0	0	1	2	2	2	2
39100	A	2-ETHLYHEXYL PHTHA,T	ETHEPT	1094	O311688	0005.000	0	0	0	1	2	2	2
39100	B	B2ETHEXPHTHEPA525.2	BPHTHEPA	2217		0000.000	0	0	1	2	3	3	3
39102	A	B-ETHHEXPHTH, BTM	B-ETHEPT	1149	O511683	0200.000	0	0	0	0	2	2	2
39110	A	DI-N-BUTYL PHTHALA,T	DIBU PT	1084	O311688	0005.000	0	0	0	1	2	2	2
39112	A	DINBUTPHTHA, BTM	B-DIBUPT	1130	O511683	0200.000	0	0	0	0	2	2	2
39120	A	BENZIDINE, TOTAL	BENZID	1069	O311688	0040.000	0	0	0	1	2	2	2
39121	A	BENZIDINE, BTM	B-BENZID	1115	O511683	0010.000	0	0	0	0	2	2	2
39175	A	VINYL CHLORIDE, TOTA	CH2=CHCL	1037	O311583	0001.000	0	0	0	2	2	2	2
39175	B	VINYL CHLORIDE, TOTA	CH2=CHCL	1313	E524 2	0000.200	0	0	1	2	2	2	2
39175	D	VINCL EPA 524.2	VINCLEPA	2232		0000.200	0	0	2	2	3	3	3
39175	C	VINYL CHLORIDE TOTA	CH2CHCL	5803	E524 2	0000.200	0	0	1	2	2	2	2
39175	Z	VINYL CHLORIDE	NAWQAVOC	5865		0000.000	3	3	3	3	3	3	3
39180	A	TRICHLOROETHYLENE,T	CL2=CCL	1035	O311583	0003.000	0	0	0	2	2	2	2
39180	B	TRICHLOROETHYLENE,T	CL2=CCL	1311	E524 2	0000.200	0	0	1	2	2	2	2
39180	D	TRICLETHENEPA524.2	3CLETEPA	2242		0000.200	0	0	2	2	3	3	3
39180	C	TRICHLOROETHYLENE T	CL2CCL	5821	E524 2	0000.200	0	0	1	2	2	2	2
39180	Z	TRICHLOROETHENE	NAWQAVOC	5900		0000.000	3	3	3	3	3	3	3
39250	B	GROSS PCNS T (WATER)	PCN TOT	0393	O310483	0000.100	0	0	1	2	2	2	2
39251	A	GROSS PCN, BTM MAT	PCN BTM	0395	O510483	0001.000	0	0	0	1	2	2	2
39300	D	4 4'DDT WWR E 608	44DDT608	1636	EA60891	0000.100	0	0	1	2	2	2	2
39310	D	4 4'DDD WWR EPA 608	44DDD608	1633	EA60891	0000.100	0	0	1	2	2	2	2
39320	D	4 4'DDE WWR EPA 608	44DDE608	1630	EA60891	0000.040	0	2	2	2	2	2	2
39330	C	ALDRIN, TOT (WATER)	ALD TOT	0350	O310483	0000.010	0	1	2	2	2	2	2
39330	B	ALDRIN, TOTAL(WATER)	ALD TOT	0738	O320280	0000.001	1	2	2	2	2	2	2
39330	D	ALDRIN WWR EPA 608	ALDR608	1624	EA60891	0000.040	0	2	2	2	2	2	2
39331	A	ALDRIN, DISSOLVED	ALD DISS	0463	O110483	0000.010	0	1	2	2	2	2	2
39332	A	ALDRIN, SUSPENDED	ALD SUS	0404	O710483	0000.010	0	1	2	2	2	2	2
39333	A	ALDRIN, BTM. MAT.	ALD BTM	0361	O510483	0000.100	0	0	1	2	2	2	2
39337	A	ALPHA BHC, TOT (H2O)	ABHC WAT	0806	O310483	0000.010	0	1	2	2	2	2	2
39337	D	ALPHA-BHC WWR-EPA608	A-BHC608	1619	EA60891	0000.030	0	2	2	2	2	2	2
39338	A	BETA BHC, TOTAL	B BHCWAT	0807	O310483	0000.010	0	1	2	2	2	2	2
39338	D	BETA BHC WWR EPA 608	B-BHC608	1620	EA60891	0000.030	0	2	2	2	2	2	2
39340	C	LINDANE, TOT (WATER)	LIND TOT	0359	O310483	0000.010	0	1	2	2	2	2	2

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
39340	B	LINDANE, TOT.(WATER)	LIND TOT	0746	O310483	0000.001	1	2	2	2	2	2	2
39340	D	GAMMA BHC LINDANEWWR	G-BHC608	1621	EA60891	0000.030	0	2	2	2	2	2	2
39340	E	LINDANE EPA 508	LINDA508	2268		0000.010	0	1	2	3	3	3	3
39341	A	LINDANE, DISSOLVED	LIND DIS	0472	O110483	0000.010	0	1	2	2	2	2	2
39341	D	HCH GAMMA-D LF	LINDANDL	4025		0000.000	1	2	2	2	1	1	1
39341	E	HCH GAMMA D FE	LINDANDF	4225		0000.000	1	2	2	2	1	1	1
39342	A	LINDANE, SUSPENDED	LIND SUS	0412	O710483	0000.010	0	1	2	2	2	2	2
39343	A	LINDANE, BTM MAT	LIND BTM	0370	O510483	0000.100	0	0	1	2	2	2	2
39350	B	CHLORDANE, T (WATER)	CHL TOT	0351	O310483	0000.100	0	0	1	2	2	2	2
39350	D	CHLORDAN.TECH WWRE8	CHLOT608	1637	EA60891	0000.100	0	0	1	2	2	2	2
39350	E	TCHLORDANE EPA 508	TCHLREPA	2271		0000.100	0	0	2	3	3	3	3
39351	A	CHLORDANE, BTM MAT	CHL BTM	0362	O510483	0001.000	0	0	0	1	2	2	2
39352	A	CHLORDANE, DISSOLVED	CHL DISS	0464	O110483	0000.100	0	0	1	2	2	2	2
39353	A	CHLORDANE, SUSPENDED	CHL SUS	0405	O710483	0000.100	0	0	1	2	2	2	2
39360	C	DDD, TOTAL (WATER)	DDD TOT	0352	O310483	0000.010	0	1	2	2	2	2	2
39360	B	DDD, TOTAL. (WATER)	DDD TOT	0739	O310483	0000.001	1	2	2	2	2	2	2
39361	A	DDD, DISSOLVED	DDD DISS	0465	O110483	0000.010	0	1	2	2	2	2	2
39362	A	DDD, SUSPENDED	DDD SUS	0406	O710483	0000.010	0	1	2	2	2	2	2
39363	A	DDD, BTM. MATERIAL	DDD BTM	0363	O510483	0000.100	0	0	1	2	2	2	2
39365	C	DDE, TOTAL (WATER)	DDE TOT	0353	O310483	0000.010	0	1	2	2	2	2	2
39365	B	DDE, TOTAL. (WATER)	DDE TOT	0740	O310483	0000.001	1	2	2	2	2	2	2
39366	A	DDE, DISSOLVED	DDE DISS	0466	O110483	0000.010	0	1	2	2	2	2	2
39367	A	DDE, SUSPENDED	DDE SUS	0407	O710483	0000.010	0	1	2	2	2	2	2
39368	A	DDE, BTM. MATERIAL	DDE BTM	0364	O510483	0000.100	0	0	1	2	2	2	2
39370	C	DDT, TOTAL. (WATER)	DDT TOT	0354	O310483	0000.010	0	1	2	2	2	2	2
39370	B	DDT, TOT. (WATER)	DDT TOT	0741	O310483	0000.001	1	2	2	2	2	2	2
39371	A	DDT, DISSOLVED	DDT DISS	0467	O110483	0000.010	0	1	2	2	2	2	2
39372	A	DDT, SUSPENDED	DDT SUS	0408	O710483	0000.010	0	1	2	2	2	2	2
39373	A	DDT, BTM. MATERIAL	DDT BTM	0365	O510483	0000.100	0	0	1	2	2	2	2
39380	C	DIELDRIN, T. (WATER)	DIEL TOT	0355	O310483	0000.010	0	1	2	2	2	2	2
39380	B	DIELDRIN,TOT.(WATER)	DIEL TOT	0742	O310483	0000.001	1	2	2	2	2	2	2
39380	D	DIELDRIN WWR EPA 608	DIELD608	1629	EA60891	0000.020	0	2	2	2	2	2	2
39381	A	DIELDRIN, DISSOLVED	DIEL DIS	0468	O310483	0000.010	0	1	2	2	2	2	2
39381	D	DIELDRIN D LE	DIELDRDL	4015		0000.000	1	2	2	2	1	1	1
39381	E	DIELDRIN D FE	DIELDRDF	4215		0000.000	1	2	2	2	1	1	1
39382	A	DIELDRIN, SUSPENDED	DIEL SUS	0409	O710483	0000.010	0	1	2	2	2	2	2
39383	A	DIELDRIN, BTM MAT	DIEL BTM	0366	O510483	0000.100	0	0	1	2	2	2	2
39388	C	ENDOSULFAN I TOTAL	ENDOS T	0349	O031483	0000.010	0	1	2	2	2	2	2
39388	B	ENDOSULFAN, TOT.	ENDOS T	0737	O320280	0000.001	1	2	2	2	2	2	2
39388	A	ENDOSULFAN, T (COMB)	ENDOS CM	0762	O420180	0000.010	0	1	2	2	2	2	2
39389	A	ENDOSULFAN IN BOTTOM	ENDOS B	0346	O510483	0000.100	0	0	1	2	2	2	2
39390	C	ENDRIN, TOTAL(WATER)	END TOT	0356	O310483	0000.010	0	1	2	2	2	2	2
39390	B	ENDRIN, TOT. (WATER)	END TOT	0743	O310483	0000.001	1	2	2	2	2	2	2
39390	D	ENDRIN WWR EPA 608	ENDRI608	1631	EA60891	0000.060	0	2	2	2	2	2	2
39390	E	ENDRIN EPA 508	ENDRIEPA	2272		0000.060	0	1	2	3	3	3	3
39391	A	ENDRIN, DISSOLVED	END DISS	0469	O310483	0000.010	0	1	2	2	2	2	2
39392	A	ENDRIN, SUSPENDED	END SUSP	0483	O710583	0000.010	0	1	2	2	2	2	2
39393	A	ENDRIN, BTM MAT	END BTM	0367	O510483	0000.100	0	0	1	2	2	2	2

Appendix C: Parameter Method Codes

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
39398	B	ETHION, TOTAL(WATER)	ETHI TOT	0379	O310483	0000.010	0	1	2	2	2	2	2
39399	A	ETHION, BTM MATERIAL	ETHI BTM	0386	O510483	0000.200	0	0	1	2	2	2	2
39400	B	TOXAPHENE, T (WATER)	TOX TOT	0360	O510483	0001.000	0	0	0	1	2	2	2
39400	D	TOXAPHENE WWR EPA608	TOXAP608	1638	EA60891	0002.000	0	0	0	1	2	2	2
39400	E	TOXAPHENE EPA 508	TOXAP508	2273		0002.000	0	0	0	2	3	3	3
39401	A	TOXAPHENE, DISSOLVED	TOX DISS	0473	O110483	0001.000	0	0	0	1	2	2	2
39402	A	TOXAPHENE, SUSPENDED	TOX SUS	0413	O710483	0001.000	0	0	0	1	2	2	2
39403	A	TOXAPHENE, BTM MAT	TOX BTM	0371	O510483	0010.000	0	0	0	0	1	2	2
39410	C	HEPTACHLOR T.(WATER)	HEPT TOT	0357	O310483	0000.010	0	1	2	2	2	2	2
39410	B	HEPTACHLOR T (WATER)	HEPT TOT	0744	O310483	0000.001	1	2	2	2	2	2	2
39410	D	HEPTACHLOR WWR E608	HEPT608	1623	EA60891	0000.030	0	2	2	2	2	2	2
39410	E	HEPTACHLOR EPA 508	HEPTCEPA	2269		0000.030	0	1	2	3	3	3	3
39411	A	HEPTACHLOR, DISS.	HEPT DIS	0470	O110483	0000.010	0	1	2	2	2	2	2
39412	A	HEPTACHLOR, SUSPEND	HEPT SUS	0410	O710483	0000.010	0	1	2	2	2	2	2
39413	A	HEPTACHLOR, BTM MAT	HEPT BTM	0368	O310791	0000.100	0	0	1	2	2	2	2
39415	A	METOLACHLOR DISSOLVE	METOLH D	1593	O112192	0000.050	0	1	2	2	2	2	2
39415	D	METOLACHLOR D LE	METOLADL	4029		0000.000	1	2	2	2	1	1	1
39415	E	METOLACHLOR D FE	METOLADF	4229		0000.000	1	2	2	2	1	1	1
39420	C	HEPT EPOX, T (WATER)	HEOX TOT	0358	O310483	0000.010	0	1	2	2	2	2	2
39420	B	HEPT EPOX, TO(WATER)	HEOX TOT	0745	O310483	0000.001	1	2	2	2	2	2	2
39420	D	HEPTACHLOR EXPWWR608	HEPEP608	1625	EA60891	0000.800	0	0	1	2	2	2	2
39420	E	HEPT EPOXIDE EPA 508	HEPEPEPA	2270		0000.800	0	0	2	3	3	3	3
39421	A	HEPT EPOX, DIS.	HEOX DIS	0471	O110483	0000.010	0	1	2	2	2	2	2
39422	A	HEPT EPOX, SUSP.	HEOX SUS	0411	O710483	0000.010	0	1	2	2	2	2	2
39423	A	HEPT EPOX, BTM MAT	HEOX BTM	0369	O520180	0000.100	0	0	1	2	2	2	2
39480	B	METHOXYCHLOR T.(WAT)	METH TOT	0400	O310483	0000.010	0	1	2	2	2	2	2
39480	C	METHOXYXHLOR EPA508	MCHLREPA	2274		0000.200	0	0	2	3	3	3	3
39481	A	METHOXYCHLOR, BTM	METH BOT	0401	O510483	0000.100	0	0	1	2	2	2	2
39488	A	AROCHLOR 1221, TOT	PCB1221C	0785	O310483	0000.100	0	0	1	2	2	2	2
39488	B	AROCHLOR 1221, TOT.	PCB1221T	0810	O310483	0000.100	0	0	1	2	2	2	2
39488	D	AROCLOR-1221 WWRE8	1221-608	1639	EA60891	0001.000	0	0	0	1	2	2	2
39491	A	AROCHLOR 1221, BTM.	PCB1221B	0786	O510483	0001.000	0	0	0	1	2	2	2
39492	A	AROCHLOR 1232, TOT	PCB1232C	0781	O310483	0000.100	0	0	1	2	2	2	2
39492	B	AROCHLOR 1232, TOT.	PCB1232T	0811	O310483	0000.100	0	0	1	2	2	2	2
39492	D	AROCLOR-1232 WWRE8	1232-608	1640	EA60891	0000.100	0	0	1	2	2	2	2
39495	A	AROCHLOR 1232, BTM.	PCB1232B	0782	O510483	0001.000	0	0	0	1	2	2	2
39496	A	AROCHLOR 1242, TOT	PCB1242C	0777	O310483	0000.100	0	0	1	2	2	2	2
39496	B	AROCHLOR 1242, TOT.	PCB1242T	0812	O310483	0000.100	0	0	1	2	2	2	2
39496	D	AROCLOR-1242 WWRE8	1242-608	1642	EA60891	0000.100	0	0	1	2	2	2	2
39499	A	AROCHLOR 1242, BTM.	PCB1242B	0778	O510483	0001.000	0	0	0	1	2	2	2
39500	A	AROCHLOR 1248, TOT	PCB1248C	0773	O310483	0000.100	0	0	1	2	2	2	2
39500	B	AROCHLOR 1248, TOT.	PCB1248T	0813	O310483	0000.100	0	0	1	2	2	2	2
39500	D	AROCLOR-1248 WWRE8	1248-608	1643	EA60891	0000.100	0	0	1	2	2	2	2
39501	A	AROCHLOR 1248, DIS.	PCB1248D	0771	O110483	0000.100	0	0	1	2	2	2	2
39502	A	AROCHLOR 1248, SUS.	PCB1248S	0772	O710483	0000.100	0	0	1	2	2	2	2
39503	A	AROCHLOR 1248, BTM.	PCB1248B	0774	O510483	0001.000	0	0	0	1	2	2	2
39504	A	AROCHLOR 1254, TOT	PCB1254C	0769	O310483	0000.100	0	0	1	2	2	2	2
39504	B	AROCHLOR 1254, TOT.	PCB1254T	0814	O310483	0000.100	0	0	1	2	2	2	2

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
39504	D	AROCLOR-1254 WWR E8	1254-608	1644	EA60891	0000.100	0	0	1	2	2	2	2
39505	A	AROCHLOR 1254, DIS.	PCB1254D	0767	O110483	0000.100	0	0	1	2	2	2	2
39506	A	AROCHLOR 1254, SUS.	PCB1254S	0768	O710483	0000.100	0	0	1	2	2	2	2
39507	A	AROCHLOR 1254, BTM.	PCB1254B	0770	O510483	0001.000	0	0	0	1	2	2	2
39508	A	AROCHLOR 1260, TOT	PCB1260C	0765	O310483	0000.100	0	0	1	2	2	2	2
39508	B	AROCHLOR 1260, TOT.	PCB1260T	0815	O310483	0000.100	0	0	1	2	2	2	2
39508	D	AROCLOR-1260 WWR E8	1260-608	1645	EA60891	0000.100	0	0	1	2	2	2	2
39509	A	AROCHLOR 1260, DIS.	PCB1260D	0763	O110483	0000.100	0	0	1	2	2	2	2
39510	A	AROCHLOR 1260, SUS.	PCB1260S	0764	O710483	0000.100	0	0	1	2	2	2	2
39511	A	AROCHLOR 1260, BTM.	PCB1260B	0766	O510483	0001.000	0	0	0	1	2	2	2
39514	A	AROCHLOR 1016, BTM.	PCB1016B	0790	O510483	0001.000	0	0	0	1	2	2	2
39516	B	GROSS PCBS T (WATER)	PCB TOT	0392	O310483	0000.100	0	0	1	2	2	2	2
39517	A	GROSS PCB, DISS	PCB DISS	0474	O110483	0000.100	0	0	1	2	2	2	2
39518	A	GROSS PCBS, SUSPEND	PCB SUS	0414	O710483	0000.100	0	0	1	2	2	2	2
39519	A	GROSS PCB, BTM MAT	PCB BTM	0394	O510483	0001.000	0	0	0	1	2	2	2
39530	B	MALATHION, T (WATER)	MALA TOT	0380	O310483	0000.010	0	1	2	2	2	2	2
39531	A	MALATHION, BTM MAT	MALA BTM	0387	O510483	0000.200	0	0	1	2	2	2	2
39532	A	MALATHION, DISSOLVED	MALA DIS	0425	O110483	0000.010	0	1	2	2	2	2	2
39532	D	MALATHION D LE	MALATHDL	4027		0000.000	1	2	2	2	1	1	1
39532	E	MALATHION D FE	MALATHDF	4227		0000.000	1	2	2	2	1	1	1
39533	A	MALATHION, SUSPENDED	MALA SUS	0419	O710483	0000.000	1	2	3	4	5	6	7
39540	B	PARATHION, TOT.	EPAR TOT	0383	O310483	0000.010	0	1	2	2	2	2	2
39541	A	PARATHION, BTM. MAT.	EPAR BTM	0390	O510483	0000.200	0	0	1	2	2	2	2
39542	A	PARATHION, DISSOLVED	PARA DIS	0427	O110483	0000.010	0	1	2	2	2	2	2
39542	D	PARATHION D LE	PARATHDL	4033		0000.000	1	2	2	2	1	1	1
39542	E	PARATHION D FE	PARATHDF	4233		0000.000	1	2	2	2	1	1	1
39543	A	PARATHION, SUSPENDED	PARA SUS	0421	O710483	0000.000	1	2	3	4	5	6	7
39570	B	DIAZINON, TOT(WATER)	DIAZ TOT	0378	O310483	0000.010	0	1	2	2	2	2	2
39570	D	DIAZINON WWR E608	DIAZINON	1713	EA60892	0000.050	0	0	1	2	2	2	2
39571	A	DIAZINON, BTM MAT	DIAZ BTM	0385	O510483	0000.200	0	0	1	2	2	2	2
39572	A	DIAZINON, DISSOLVED	DIAZ DIS	0423	O110483	0000.010	0	1	2	2	2	2	2
39572	D	DIAZINON D LE	DIAZINDL	4013		0000.000	1	2	2	2	1	1	1
39572	E	DIAZINON D FE	DIAZINDF	4213		0000.000	1	2	2	2	1	1	1
39573	A	DIAZINON, SUSPENDED	DIAZ SUS	0417	O710483	0000.000	1	2	3	4	5	6	7
39580	A	AZINPHOS-METHYL	AZINPHOS	0805	O310483	0000.100	0	0	1	2	2	2	2
39581	A	AZINPHOS-METHYL	AZINPHOS	0819	O510483	0000.100	0	0	1	2	2	2	2
39600	B	METHYLPARATHION TOT.	MPAR TOT	0381	O310483	0000.010	0	1	2	2	2	2	2
39601	A	METHYLPARATHION, BTM	MPAR BTM	0388	O510483	0000.200	0	0	1	2	2	2	2
39602	A	METHYLPARATHION, DIS	MPAR DIS	0426	O110483	0000.010	0	1	2	2	2	2	2
39603	A	METHYLPARATHION, SUS	MPAR SUS	0420	O710483	0000.000	1	2	3	4	5	6	7
39630	A	ATRAZINE WWR	ATRZ TOT	0717	O310691	0000.100	0	0	1	2	2	2	2
39630	B	ATRAZINE EPA 507	ATRAZEP	2210		0000.100	1	2	3	3	3	3	3
39632	A	ATRAZINE DISSOLVED	ATRAZN D	1589	O112192	0000.050	0	1	2	2	2	2	2
39632	D	ATRAZINE D LE	ATRAZIDL	4003		0000.000	1	2	2	2	1	1	1
39632	E	ATRAZINE D FE	ATRAZIDF	4203		0000.000	1	2	2	2	1	1	1
39700	A	HEXACHLOROBENZENE, T	HXCLBZ	1097	O311688	0005.000	0	0	0	1	2	2	2
39700	B	HEXA CL BENZENEPA508	HCLBEEPA	2267		0000.200	0	0	2	3	3	3	3
39701	A	HEX CL BZ, BTM	B-HXCLBZ	1152	O511683	0200.000	0	0	0	0	2	2	2

Appendix C: Parameter Method Codes

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
39702	A	HEXACHLOROBUTADIEN, T	HXCBUD	1098	0311688	0005.000	0	0	0	1	2	2	2
39702	C	HEXACHLOROBUTADIENE	HCBDEN	1675		0000.200	0	0	1	2	2	2	2
39702	B	HEXACHLOROBUTADIENE	HCBDEN	1676		0003.000	0	0	1	2	2	2	2
39702	D	HEXACHLOROBUTADIENE	HCBDEN	5855		0000.200	0	0	1	2	2	2	2
39702	Z	HEXACHLOROBUTADIENE	NAWQAVOC	5947		0000.000	3	3	3	3	3	3	3
39705	A	HEXCLBUTDIENE, BTM	B-HXCBUD	1153	0511683	0200.000	0	0	0	0	2	2	2
39720	A	PICLORAM, TOTAL	PICLOTOT	0748	0310583	0000.010	0	1	2	2	2	2	2
39720	B	PICLORAMEPE515.1	PICLEPA	2204		0000.600	1	2	3	3	3	3	3
39730	B	2,4-D, TOT. (WATER)	24D TOT	0372	0310583	0000.010	0	1	2	2	2	2	2
39730	C	24DEPA515.1	24DEPA	2201		0001.000	1	2	3	3	3	3	3
39731	A	2,4-D, BTM. MATERIAL	24D BTM	0375	0510583	0000.100	0	0	1	2	2	2	2
39732	A	2,4-D, DISSOLVED	24D DISS	0477	0110583	0000.010	0	1	2	2	2	2	2
39732	B	2 4 D - DLE	2 4 D	5408		0000.000	1	2	2	2	2	2	3
39732	C	2 4 D - DFE	2 4 D	5608		0000.000	1	2	2	2	2	2	3
39733	A	2,4-D, SUSPENDED	24D SUS	0480	0710583	0000.010	0	1	2	2	2	2	2
39740	B	2,4,5-T TOT. (WATER)	245T TOT	0373	0310583	0000.010	0	1	2	2	2	2	2
39741	A	2,4,5-T, BTM MAT	245T BTM	0376	0510583	0000.100	0	0	1	2	2	2	2
39742	A	2,4,5-T DISSOLVED	245T DIS	0478	0110583	0000.010	0	1	2	2	2	2	2
39742	B	2 4 5-T - DLE	2 4 5-T	5409		0000.000	1	2	2	2	2	2	3
39742	C	2 4 5-T - DFE	2 4 5-T	5609		0000.000	1	2	2	2	2	2	3
39743	A	2,4,5-T, SUSPENDED	245T SUS	0481	0710583	0000.010	0	1	2	2	2	2	2
39750	A	CARBARYL WWR	CARBARYL	0636	0310791	0000.013	0	0	1	2	2	2	2
39755	B	MIREX, TOT.	MIRX TOT	0544	0310483	0000.010	0	1	2	2	2	2	2
39756	A	MIREX, DISSOLVED	MIRX DIS	0542	0110483	0000.010	0	1	2	2	2	2	2
39757	A	MIREX, SUSPENDED	MIRX SUS	0543	0710483	0000.010	0	1	2	2	2	2	2
39758	A	MIREX, BTM MAT	MIRX BTM	0545	0510483	0000.100	0	0	1	2	2	2	2
39760	B	SILVEX, TOTAL(WATER)	SILV TOT	0374	0310583	0000.010	0	1	2	2	2	2	2
39760	C	245TPEPA515.1	24STPEPA	2203		0000.500	1	2	3	3	3	3	3
39761	A	SILVEX, BTM MAT	SILV BTM	0377	0510583	0000.100	0	0	1	2	2	2	2
39762	A	SILVEX, DISSOLVED	SILV DIS	0479	0110583	0000.010	0	1	2	2	2	2	2
39762	B	SILVEX - DLE	SILVEX	5444		0000.000	1	2	2	2	2	2	3
39762	C	SILVEX - DFE	SILVEX	5644		0000.000	1	2	2	2	2	2	3
39763	A	SILVEX, SUSPENDED	SILV SUS	0482	0710583	0000.010	0	1	2	2	2	2	2
39786	B	TRITHION, TOT.	ETRI TOT	0384	0310483	0000.010	0	1	2	2	2	2	2
39787	A	TRITHION, BTM. MAT.	ETRI BTM	0391	0510483	0000.200	0	0	1	2	2	2	2
39790	B	METHYLTRITHION, T.	MTRI TOT	0382	0310483	0000.010	0	1	2	2	2	2	2
39941	A	3 5-DINITROANILINE	EXPLOSVE	1835		0000.001	1	2	2	2	2	2	3
45617	B	12-CT-DICHLOROETHENE	12-CT-DI	1008	0311583	0000.200	0	0	1	2	2	2	2
46342	A	ALACHLOR DISSOLVED	ALACHL D	1587	0112192	0000.050	0	1	2	2	2	2	2
46342	D	ALACHLOR D LE	ALACHLDL	4001		0000.000	1	2	2	2	1	1	1
46342	E	ALACHLOR D FE	ALACHLDF	4201		0000.000	1	2	2	2	1	1	1
49221	A	GLYPHOSATE	GLYPHSAT	1834		0005.000	0	0	2	2	3	3	3
49222	A	3-NITROTOLUENE	EXPLOSVE	1819		0000.001	1	2	2	2	2	2	3
49223	A	4-NITROTOLUENE	EXPLOSVE	1818		0000.001	1	2	2	2	2	2	3
49224	A	4AMINO2 6-2NITROTOLN	EXPLOSVE	1708		0000.001	1	2	2	2	2	2	3
49225	A	2AMINO4 6-2NITROTOLN	EXPLOSVE	1707		0000.001	1	2	2	2	2	2	3
49226	A	246-TRINITROTOLUENE	EXPLOSVE	1714		0000.001	1	2	2	2	2	2	3
49227	A	2 6-DINITROTOLUENE	EXPLOSVE	1715		0000.001	1	2	2	2	2	2	3

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
49228	A	2 4-DINITROTOLUENE	EXPLOSVE	1716		0000.001	1	2	2	2	2	2	3
49229	A	NITROBENZENE	EXPLOSVE	1706		0000.001	1	2	2	2	2	2	3
49230	A	M-DINITROBENZENE	EXPLOSVE	1705		0000.001	1	2	2	2	2	2	3
49232	A	135-TRINITROBENZENE	EXPLOSVE	1704		0000.001	1	2	2	2	2	2	3
49233	A	RDX-C135-3M246-3NTAM	EXPLOSVE	1703		0000.001	1	2	2	2	2	2	3
49234	A	HMX-CY4MTHLN4NITRAMN	EXPLOSVE	1702		0000.001	1	2	2	2	2	2	3
49235	A	TRICLOPYR - DLE	TRICLCPYR	5446		0000.000	1	2	2	2	2	2	3
49235	B	TRICLOPYR - DFE	TRICLCPYR	5646		0000.000	1	2	2	2	2	2	3
49236	A	PROPHAM - DLE	PROPHAM	5443		0000.000	1	2	2	2	2	2	3
49236	B	PROPHAM - DFE	PROPHAM	5643		0000.000	1	2	2	2	2	2	3
49237	A	ALUMINUM BIO ICP DW	ALBICP	6000		0001.000	0	0	1	2	3	3	3
49237	B	ALUMINUM BIOICPMS DW	ALBICPMS	6017		0000.100	0	0	1	2	3	3	3
49238	A	BARIUM BIO ICP DW	BABICP	6001		0000.100	0	0	1	2	3	3	3
49238	B	BARIUM BIO ICP MS DW	BABICPMS	6020		0000.100	0	0	1	2	3	3	3
49239	A	BORON BIO ICP DW	BBICP	6003		0000.200	0	0	1	2	3	3	3
49239	B	BORON BIO ICP MS DW	BBICPMS	6022		0000.100	0	0	1	2	3	3	3
49240	A	CHROMIUM BIO ICP DW	CRBICP	6005		0000.500	0	0	1	2	3	3	3
49240	B	CHROMIUM BIOICPMS DW	CRBICPMS	6024		0000.100	0	0	1	2	3	3	3
49241	A	COPPER BIO ICP DW	CUBICP	6007		0000.500	0	0	1	2	3	3	3
49241	B	COPPER BIO ICP MS DW	CUBICPMS	6026		0000.100	0	0	1	2	3	3	3
49242	A	IRON BIO ICP DW	FEBICP	6008		0001.000	0	0	1	2	3	3	3
49242	B	IRON BIO ICP MS DW	FEBICPMS	6027		0000.100	0	0	1	2	3	3	3
49243	A	MANGANESE BIO ICP DW	MNBICP	6010		0000.100	0	0	1	2	3	3	3
49243	B	MANGANESE BIOICPMSDW	MNBICPMS	6029		0000.100	0	0	1	2	3	3	3
49244	A	STRONTIUM BIO ICP DW	SRBICP	6014		0000.100	0	0	1	2	3	3	3
49244	B	STRONTIUMBIOICPMS DW	SRBICPMS	6034		0000.100	0	0	1	2	3	3	3
49245	A	ZINC BIO ICP DW	ZNBICP	6016		0000.500	0	0	1	2	3	3	3
49245	B	ZINC BIO ICP MS DW	ZNBICPMS	6038		0000.100	0	0	1	2	3	3	3
49246	A	ANTIMONY BIOICPMS DW	SBBICPMS	6018		0000.100	0	0	1	2	3	3	3
49247	A	ARSENIC BIO ICPMS DW	ASBICPMS	6019		0000.100	0	0	1	2	3	3	3
49247	B	ARSENIC BIO HGA DW	ASBHGA	6039		0000.500	0	0	1	2	3	3	3
49248	B	BERYLLIUM BIO ICP DW	BEBICP	6002		0000.100	0	0	1	2	3	3	3
49248	A	BERYLLIUMBIOICPMS DW	BEBICPMS	6021		0000.100	0	0	1	2	3	3	3
49249	C	CADMIUM BIO ICP DW	CDBICP	6004		0000.100	0	0	1	2	3	3	3
49249	A	CADMIUM BIO ICPMS DW	CDBICPMS	6023		0000.100	0	0	1	2	3	3	3
49249	B	CADMIUM BIO HGA DW	CDBHGA	6040		0000.100	0	0	1	2	3	3	3
49250	C	COBOLT BIO ICP DW	COBICP	6006		0000.100	0	0	1	2	3	3	3
49250	A	COBALT BIO ICPMS	COBICPMS	6025		0000.100	0	0	1	2	3	3	3
49250	B	COBOLT BIO HGA DW	COBHGA	6041		0000.500	0	0	1	2	3	3	3
49251	C	LEAD BIO ICP DW	PBBICP	6009		0000.500	0	0	1	2	3	3	3
49251	A	LEAD BIO ICP MS DW	PBBICPMS	6028		0000.100	0	0	1	2	3	3	3
49251	B	LEAD BIO HGA DW	PBBHGA	6043		0000.100	0	0	1	2	3	3	3
49252	B	MOLYBDENUM BIOICP DW	MOBICP	6011		0000.500	0	0	1	2	3	3	3
49252	A	MOLYBDEMIUMBIOICPMSD	MOBICPMS	6030		0000.100	0	0	1	2	3	3	3
49253	C	NICKEL BIO ICP DW	NIBICP	6012		0000.500	0	0	1	2	3	3	3
49253	A	NICKEL BIO ICP MS DW	NIBICPMS	6031		0000.100	0	0	1	2	3	3	3
49253	B	NICKEL BIO HGA DW	NIBHGA	6042		0000.500	0	0	1	2	3	3	3
49254	A	SELENIUM BIOICPMS DW	SEBICPMS	6032		0000.100	0	0	1	2	3	3	3

Appendix C: Parameter Method Codes

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
49254	B	SELENIUM BIO HGA DW	SEBHGA	6045		0000.500	0	0	1	2	3	3	3
49255	C	SILVER BIO ICP DW	AGBICP	6013		0000.100	0	0	1	2	3	3	3
49255	A	SILVER BIO ICP MS DW	AGBICPMS	6033		0000.100	0	0	1	2	3	3	3
49255	B	SILVER BIO HGA DW	AGBHGA	6044		0000.100	0	0	1	2	3	3	3
49256	B	THORIUM BIO ICPMS DW	THBICPMS	6035		0000.100	0	0	1	2	3	3	3
49257	A	URANIUM BIO ICPMS DW	UBICPMS	6036		0000.100	0	0	1	2	3	3	3
49258	A	MERCURY BIO CV DW	HGBCV	6046		0000.100	0	1	2	2	3	3	3
49260	D	ACETOCHLOR D LE	ACTCL LE	4053		0000.000	1	2	2	2	1	1	1
49260	E	ACETOCHLOR D FE	ACTCL FE	4253		0000.000	1	2	2	2	1	1	1
49261	A	ALPHA D6 HCH (SURR)	SURR2101	7034		0000.000	0	1	2	3	3	4	7
49262	A	METHYL IODIDE	MEIODIDE	1848		0000.500	0	0	0	0	0	0	0
49263	A	T-1 4DCHLR-2-BUTENE	T14D2BTN	1851		0001.000	0	0	0	0	0	0	0
49264	A	3 5-DICHLOROBIPHENYL	SURR2101	7035		0000.000	0	1	2	3	3	4	7
49266	G	CARBON ORG TBM<63FS	CTO<6FS	1783	GC01090	0000.010	0	1	2	3	3	3	3
49267	F	CARBON TOT TBM<63FS	CTB<63FS	1781	GN01090	0000.010	0	1	2	3	3	3	3
49269	G	CARBONATE C TBM<63FS	C03<63FS	1782	GC01090	0000.010	0	1	2	3	3	3	3
49270	D	CARBON INORGANIC BN	INORGCBN	5051		0000.100	0	1	2	2	2	2	2
49271	B	CARBON ORGANIC BN	ORGCARBN	5052		0000.100	0	1	2	2	2	2	2
49272	B	CARBON TOTAL BN	TOTCARBN	5050		0000.100	0	1	2	2	2	2	2
49273	A	WATER BIO PERCENT DW	WATERB	6047		0000.000	0	0	1	2	3	3	3
49274	A	TITANIUM ICPTBM<63FS	TIB<63FS	1743	GE01090	0000.005	1	2	2	2	2	2	2
49275	B	SR.ALPHA-HCHD-6%RCBN	SHCHD6BN	5032		0000.100	0	1	2	2	2	2	2
49276	B	SR.BZ#204 PCB %RCBN	S204PCBN	5048		0000.100	0	1	2	2	2	2	2
49277	B	SR.BZ#14 PCB %RCBN	S14PCBBN	5034		0000.100	0	1	2	2	2	2	2
49278	B	SRD14-TERPHENYL%RCBN	SD14TPBN	5286		0000.100	0	1	2	2	2	2	2
49279	B	SR.2 FLBIPHENYL%RCBN	S2FBPHBN	5288		0000.100	0	1	2	2	2	2	2
49280	B	SRD5NITROBENZENE%RCB	SD5NBZBN	5287		0000.100	0	1	2	2	2	2	2
49289	A	LIPIDS% IN TIS NQ-CL	LIP%TNCL	7031		0000.500	0	0	1	2	3	3	3
49291	A	PICLORAM - DLE	PICLORAM	5442		0000.000	1	2	2	2	2	2	3
49291	B	PICLORAM - DFE	PICLORAM	5642		0000.000	1	2	2	2	2	2	3
49292	A	ORYZALIN - DLE	ORYZALIN	5440		0000.000	1	2	2	2	2	2	3
49292	B	ORYZALIN - DFE	ORYZALIN	5640		0000.000	1	2	2	2	2	2	3
49293	A	NORFLURAZON - DLE	NORFLZON	5439		0000.000	1	2	2	2	2	2	3
49293	B	NORFLURAZON - DFE	NORFLZON	5639		0000.000	1	2	2	2	2	2	3
49294	A	NEBURON - DLE	NEBURON	5403		0000.000	1	2	2	2	2	2	3
49294	B	NEBURON - DFE	NEBURON	5603		0000.000	1	2	2	2	2	2	3
49295	A	1-NAPHTHOL- DLE	NAPTHOL1	5438		0000.000	1	2	2	2	2	2	3
49295	B	1-NAPHTHOL- DFE	NAPTHOL1	5638		0000.000	1	2	2	2	2	2	3
49296	A	METHOMYL - DLE	METHOMYL	5437		0000.000	1	2	2	2	2	2	3
49296	B	METHOMYL - DFE	METHOMYL	5637		0000.000	1	2	2	2	2	2	3
49297	A	FENURON DLE	FENURON	5405		0000.000	1	2	2	2	2	2	3
49297	B	FENURON DFE	FENURON	5605		0000.000	1	2	2	2	2	2	3
49298	A	ESFENVALERATE - DLE	ESFNVALT	5429		0000.000	1	2	2	2	2	2	3
49298	B	ESFENVALERATE - DFE	ESFNVALT	5629		0000.000	1	2	2	2	2	2	3
49299	A	DNOC - DLE	DNOC	5402		0000.000	1	2	2	2	2	2	3
49299	B	DNOC - DFE	DNOC	5602		0000.000	1	2	2	2	2	2	3
49300	A	DIURON - DLE	DIURON	5427		0000.000	1	2	2	2	2	2	3
49300	B	DIURON - DFE	DIURON	5627		0000.000	1	2	2	2	2	2	3

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
49301	A	DINOSEB - DLE	DINOSEB	5400		0000.000	1	2	2	2	2	2	3
49301	B	DINOSEB - DFE	DINOSEB	5600		0000.000	1	2	2	2	2	2	3
49302	A	DICHLORPROP-DLE	DCHLRLPRP	5401		0000.000	1	2	2	2	2	2	3
49302	B	DICHLORPROP-DFE	DCHLRLPRP	5601		0000.000	1	2	2	2	2	2	3
49303	A	DICHLOBENIL - DLE	DICHLBNL	5404		0000.000	1	2	2	2	2	2	3
49303	B	DICHLOBENIL - DFE	DICHLBNL	5604		0000.000	1	2	2	2	2	2	3
49304	A	DACTHL-MONO-ACID-DLE	DCTHLMTP	5447		0000.000	1	2	2	2	2	2	3
49304	B	DACTHL-MONO-ACID-DFE	DCTHLMTP	5647		0000.000	1	2	2	2	2	2	3
49305	A	CLOPYRALID - DLE	CLPYRLID	5423		0000.000	1	2	2	2	2	2	3
49305	B	CLOPYRALID - DFE	CLPYRLID	5623		0000.000	1	2	2	2	2	2	3
49306	A	CHLOROTHALONIL - DLE	CHLRTHNL	5421		0000.000	1	2	2	2	2	2	3
49306	B	CHLOROTHALONIL - DFE	CHLRTHNL	5621		0000.000	1	2	2	2	2	2	3
49307	A	CHLORAMBEN - DLE	CHLRAMBN	5419		0000.000	1	2	2	2	2	2	3
49307	B	CHLORAMBEN - DFE	CHLRAMBN	5619		0000.000	1	2	2	2	2	2	3
49308	A	CARBOFURAN-3HDXY-DLE	CBFNHYDX	5449		0000.000	1	2	2	2	2	2	3
49308	B	CARBOFURAN-3HDXY-DFE	CBFNHYDX	5649		0000.000	1	2	2	2	2	2	3
49309	C	CARBOTURAN EPA 531.1	CARB-EPA	2226		0005.000	0	0	1	2	2	2	2
49309	A	CARBOFURAN - DLE	CARBFURN	5418		0000.000	1	2	2	2	2	2	3
49309	B	CARBOFURAN - DFE	CARBFURN	5618		0000.000	1	2	2	2	2	2	3
49310	A	CARBARYL - DLE	CARBARYL	5417		0000.000	1	2	2	2	2	2	3
49310	B	CARBARYL - DFE	CARBARYL	5617		0000.000	1	2	2	2	2	2	3
49311	A	BROMOXYNIL - DLE	BROMXYNL	5416		0000.000	1	2	2	2	2	2	3
49311	B	BROMOXYNIL - DFE	BROMXYNL	5616		0000.000	1	2	2	2	2	2	3
49312	A	ALDICARB - DLE	ALDICARB	5411		0000.000	1	2	2	2	2	2	3
49312	B	ALDICARB - DFE	ALDICARB	5611		0000.000	1	2	2	2	2	2	3
49313	A	ALDICARB SULFONE-DLE	ALDSULFN	5413		0000.000	1	2	2	2	2	2	3
49313	B	ALDICARB SULFONE-DFE	ALDSULFN	5613		0000.000	1	2	2	2	2	2	3
49314	A	ALDICARB SULFXDE-DLE	ALDSULFX	5412		0000.000	1	2	2	2	2	2	3
49314	B	ALDICARB SULFXDE-DFE	ALDSULFX	5612		0000.000	1	2	2	2	2	2	3
49315	A	ACIFLUORFEN - DLE	ACIFLRFN	5410		0000.000	1	2	2	2	2	2	3
49315	B	ACIFLUORFEN - DFE	ACIFLRFN	5610		0000.000	1	2	2	2	2	2	3
49316	B	CIS-NONACHLOR BTMNQ	C-NOCLBN	5041		0001.000	0	1	2	2	2	2	2
49317	B	TRANS-NONACHLOR BN	TNONCLBN	5039		0001.000	0	1	2	2	2	2	2
49318	B	OXYCHLORDANE BTM NQ	OXCLDNBN	5038		0001.000	0	1	2	2	2	2	2
49319	B	ALDRIN BTM NQA	ALDRINBN	5001		0001.000	0	1	2	2	2	2	2
49320	B	CHLORDANE-CIS BTNQ	CCHLRLDBN	5002		0001.000	0	1	2	2	2	2	2
49321	B	CHLORDANE TRANS BTNQ	TRHLRDBN	5003		0001.000	0	1	2	2	2	2	2
49322	B	CHLORNEB BTM NAWQA	CHLORNEB	5054		0005.000	0	0	1	2	2	2	2
49324	B	DCPA BTM NQ	DCP-BN	5036		0005.000	0	1	2	2	2	2	2
49325	B	DDD-O P' BTNQ	OPDDDBN	5008		0001.000	0	1	2	2	2	2	2
49326	A	DDD P P' BTNQ	PPDDDBN	5009		0001.000	0	1	2	2	2	2	2
49327	B	DDE OP BTNQ	OPDDEBN	5010		0001.000	0	1	2	2	2	2	2
49328	B	DDE P P' BTNQ	PPDDEBN	5011		0001.000	0	1	2	2	2	2	2
49329	B	DDT-O P' BTNQ	OPDDTBN	5012		0002.000	0	1	2	2	2	2	2
49330	B	DDT PP' BTNQ	PPDDTBN	5013		0002.000	0	1	2	2	2	2	2
49331	B	DIELDRIN BTNQ DW	DLDLRINBN	5014		0001.000	0	1	2	2	2	2	2
49332	B	ENDOSULFAN1 BTNQ	ENDOS1BN	5015		0001.000	0	1	2	2	2	2	2
49335	B	ENDRIN BTNQ	ENDRINBN	5018		0002.000	0	1	2	2	2	2	2

Appendix C: Parameter Method Codes

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
49338	B	ALPHA BHC BTM NQA	ALBHCBN	5026		0001.000	0	1	2	2	2	2	2
49339	B	BETA-BHC BTM NQA	BETBHCBN	5027		0001.000	0	1	2	2	2	2	2
49341	B	HEPTACHLOR BTNQ	HEPTCIBN	5020		0001.000	0	1	2	2	2	2	2
49342	B	HEPTACHL-EP BTM QBW	HEPTEPBN	5021		0001.000	0	1	2	2	2	2	2
49343	A	CL6BENZENE BTNQ	CL6BZNBN	5006		0001.000	0	1	2	2	2	2	2
49343	B	CL6BENZENE BTM NQA	CL6BZNBN	5228		0005.000	0	0	0	1	2	2	2
49344	B	ISODRIN BTM NQ	ISODRIBN	5037		0001.000	0	1	2	2	2	2	2
49345	B	LINDANE BTM NQA	LINDANBN	5022		0001.000	0	1	2	2	2	2	2
49346	B	PP'-METHOXYCHLOR BN	PP'MEXBN	5044		0005.000	0	1	2	2	2	2	2
49347	B	OP'-METHOXYCHLOR BN	OP'MEXBN	5042		0005.000	0	1	2	2	2	2	2
49348	B	MIREX BTM NQA	MIREXBN	5023		0001.000	0	1	2	2	2	2	2
49349	B	CIS-PERMETHRIN BNQA	CPERMTHN	5055		0005.000	0	0	1	2	2	2	2
49350	B	TRANS-PERMETHRIN BNQ	TPERMTHN	5056		0005.000	0	0	1	2	2	2	2
49351	B	TOXAPHENE BTQA	TOXAPHBN	5025		0200.000	0	0	1	2	2	2	2
49353	A	ALDRIN TISWWN	ALD-TISN	7030		0005.000	0	0	1	2	2	2	2
49354	A	PCB TOTAL TISWWN	PCBTOTTN	7029		0050.000	0	0	1	2	2	2	2
49355	A	TOXAPHENE TISWWN	TOXAPHTN	7028		0200.000	0	0	1	2	2	2	2
49356	A	CL5ANISOLE TISWWN	CL5ANITN	7027		0005.000	0	0	1	2	2	2	2
49357	A	OXCHLORDNE TISWWN	OCLDNETN	7025		0005.000	0	0	1	2	2	2	2
49358	A	T-NONACHLOR TISWWN	TRS9CLTN	7024		0005.000	0	0	1	2	2	2	2
49359	A	C-NONACHLOR TISWWN	CIS9CLTN	7023		0005.000	0	0	1	2	2	2	2
49360	A	MIREX TISWWN	MIREXTN	7022		0005.000	0	0	1	2	2	2	2
49361	A	P P'METHOXCL TISWWN	PPMOCLTN	7021		0005.000	0	0	1	2	2	2	2
49362	A	O P'METHOXCL TISWWN	OPMOCLTN	7020		0005.000	0	0	1	2	2	2	2
49363	A	GAMMA HCH TISWWN	GAMHCHTN	7019		0005.000	0	0	1	2	2	2	2
49364	A	DELTA HCH TISWWN	DELHCHTN	7018		0005.000	0	0	1	2	2	2	2
49365	A	BETA HCH TISWWN	BETHCHTN	7017		0005.000	0	0	1	2	2	2	2
49366	A	ALPHA HCH TISWWN	ALHCHTN	7016		0005.000	0	0	1	2	2	2	2
49367	A	CL6BENZENE TISWWN	CL6BZNTN	7014		0005.000	0	0	1	2	2	2	2
49368	A	HEPTACHL-EP TISWWN	HEPTEPTN	7013		0005.000	0	0	1	2	2	2	2
49369	A	HEPTACHLOR TISWWN	HEPTCTN	7012		0005.000	0	0	1	2	2	2	2
49370	A	ENDRIN TISWWN	ENDRINTN	7011		0005.000	0	0	1	2	2	2	2
49371	A	DIELDRIN TISWWN	DLDREINTN	7010		0005.000	0	0	1	2	2	2	2
49372	A	P P'DDE TISWWN	PP'DDETN	7009		0005.000	0	0	1	2	2	2	2
49373	A	O P'DDE TISWWN	OP'DDETN	7008		0005.000	0	0	1	2	2	2	2
49374	A	O P'DDD TISWWN	OP'DDDTN	7007		0005.000	0	0	1	2	2	2	2
49375	A	P P' DDD TISWWN	PP'DDDTN	7006		0005.000	0	0	1	2	2	2	2
49376	A	P P'-DDT TISWWN	PP'DDTTN	7005		0005.000	0	0	1	2	2	2	2
49377	A	O P'-DDT TISWWN	OP'DDTTN	7004		0005.000	0	0	1	2	2	2	2
49378	A	DACTHAL TISWWN	DACTHLTN	7003		0005.000	0	0	1	2	2	2	2
49379	A	CHLORDANE-T TISWWN	TCHLDRTN	7002		0005.000	0	0	1	2	2	2	2
49380	A	CHLORDANE-C TISWWN	CCHLDRTN	7001		0005.000	0	0	1	2	2	2	2
49381	B	DIBUTYLPHTHAL BTMNQA	DBPHTHBN	5235		0005.000	0	0	0	1	2	2	2
49382	B	DINOCTYLPHTH BTM NQA	DOPHTHBN	5239		0005.000	0	0	0	1	2	2	2
49383	B	DIETHYLPHTHAL BTMNQA	DEPHTHBN	5237		0005.000	0	0	0	1	2	2	2
49384	B	DIMETHYLPHTH BTM NQA	DMPHTHBN	5238		0005.000	0	0	0	1	2	2	2
49387	B	PYRENE BTM NQA	PYRENEBN	5252		0005.000	0	0	0	1	2	2	2
49388	B	1-METHYL-PYRENEBN	1MEPYNBN	5284		0005.000	0	0	0	1	2	2	2

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
49389	B	BENZOAPYRENE BTM NQA	BZAPYRBN	5221		0005.000	0	0	0	1	2	2	2
49390	B	IND123 CDPYR BTM NQA	ICDPYRBN	5241		0005.000	0	0	0	1	2	2	2
49391	B	2 2'-BIQUINOLINE BN	22QUINBN	5285		0005.000	0	0	0	1	2	2	2
49392	B	QUINOLINE BN	QUINOLBN	5260		0005.000	0	0	0	1	2	2	2
49393	B	PHENANTHRIDINE BN	PHEANDBN	5277		0005.000	0	0	0	1	2	2	2
49394	B	ISO QUINOLINE BN	I-QUINBN	5261		0005.000	0	0	0	1	2	2	2
49395	B	2 4-DINITROTOLBTMNQA	2 4NTLBN	5203		0005.000	0	0	0	1	2	2	2
49396	B	2 6-DINITROTOLBTMNQA	2 6NTLBN	5205		0005.000	0	0	0	1	2	2	2
49397	B	BENZKFLUORAN BTM NQA	BZKFLNBN	5220		0005.000	0	0	0	1	2	2	2
49398	B	1-ME-9H-FLUORENE BN	M9HFLOBN	5273		0005.000	0	0	0	1	2	2	2
49399	B	9H-FLUORENE BTM NQA	9HFLRNBN	5210		0005.000	0	0	0	1	2	2	2
49400	B	ISOPHORONE BTM NQA	ISOPHRBN	5242		0005.000	0	0	0	1	2	2	2
49401	B	B2CLETHOXyme BTM NQA	B2CEOMBN	5214		0005.000	0	0	0	1	2	2	2
49402	B	NAPHTHALENE BTM NQA	NAPHTHBN	5246		0005.000	0	0	0	0	2	2	2
49403	B	1 2ME NAPHTHALENE BN	1 2MENBN	5267		0005.000	0	0	0	1	2	2	2
49404	B	1 6ME-NAPHTHALENE BN	1 6MENBN	5266		0005.000	0	0	0	1	2	2	2
49405	B	2 3 6MENAPHTHALENEBN	236MENBN	5270		0005.000	0	0	0	1	2	2	2
49406	B	2 6ME NAPHTHALENE BN	2 6MENBN	5265		0005.000	0	0	0	1	2	2	2
49407	B	2CLNAPHTHALN BTM NQA	2CLNPBPN	5207		0005.000	0	0	0	1	2	2	2
49408	B	BENZGHIPERYL BTM NQA	BZGHIPBN	5219		0005.000	0	0	0	1	2	2	2
49409	B	PHENANTHRENE BTM NQA	PHENANTB	5248		0005.000	0	0	0	1	2	2	2
49410	B	1-MEPHENANTHRENEBN	1MEPNABN	5282		0005.000	0	0	0	1	2	2	2
49411	B	4 5 MEYNEPHENANTHEBN	45MPNEBN	5281		0005.000	0	0	0	1	2	2	2
49413	B	PHENOL BTM NQA	PHENOLBN	5249		0005.000	0	0	0	1	2	2	2
49414	B	2 3 5 6ME(4)PHENOLBN	TMEPHBN	5263		0005.000	0	0	0	1	2	2	2
49415	B	246CL3PHENOL BTM NQA	246C3PBN	5204		0005.000	0	0	0	1	2	2	2
49416	B	2 4 6-ME(3)PHENOL BN	2 4 6TBN	5259		0005.000	0	0	0	1	2	2	2
49417	B	2 4 DICHLOR PHENOLBN	2 4DCPBN	5257		0005.000	0	0	0	1	2	2	2
49418	B	2 4-DINITROPHENOL BN	2 4DNPBN	5268		0005.000	0	0	0	1	2	2	2
49419	B	2ME4 6 NIT PHENOL BN	2M46NPBN	5271		0005.000	0	0	0	1	2	2	2
49420	B	2-NITRO-PHENOL BN	2NITPHBN	5255		0005.000	0	0	0	1	2	2	2
49421	B	3 5 DIMETHYLPHENOLBN	3 5DMPBN	5258		0005.000	0	0	0	1	2	2	2
49422	B	4CL-3METHYLPHENOL BN	4C3MPHBN	5262		0005.000	0	0	0	1	2	2	2
49423	B	4-NITRO PHENOL BN	4NITPHBN	5269		0005.000	0	0	0	1	2	2	2
49424	B	ALKYL-PHENOL C8 BN	ALPHC8BN	5256		0005.000	0	0	0	1	2	2	2
49425	B	CL5PHENOL BTM NQA	CL5PHNBN	5227		0005.000	0	0	0	1	2	2	2
49426	B	BIS2ETHEXPHTH BTMNQA	EHPHTHBN	5223		0005.000	0	0	0	1	2	2	2
49427	B	BUTBZLPHTHAL BTM NQA	BUBZPTBN	5224		0005.000	0	0	0	1	2	2	2
49428	B	ACENAPHTHYLENE B NQA	ACENALBN	5212		0005.000	0	0	0	1	2	2	2
49429	B	ACENAPHTHENE BTM NQA	ACENAPBN	5211		0005.000	0	0	0	1	2	2	2
49430	B	ACRIDINE BN	ACRIDIBN	5276		0005.000	0	0	0	1	2	2	2
49431	B	N-NITRDIPROPA BTMNQA	NTDPRMBN	5245		0005.000	0	0	0	1	2	2	2
49433	B	N-NITRDIPHNLB BTMNQA	NTDPAMB	5244		0005.000	0	0	0	1	2	2	2
49434	B	ANTHRACENE BTM NQA	ANTHRABN	5213		0005.000	0	0	0	1	2	2	2
49435	B	2-ME ANTHRACENE BN	2MEANTBN	5279		0005.000	0	0	0	1	2	2	2
49436	B	BENZAANTHRAC BTM NQA	BZAANTBN	5217		0005.000	0	0	0	1	2	2	2
49437	B	ANTHRAQUINONE BN	ANTQUIBN	5283		0005.000	0	0	0	1	2	2	2
49438	B	124CL3BENZENE BTMNQA	124CLBBN	5201		0005.000	0	0	0	1	2	2	2

Appendix C: Parameter Method Codes

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
49439	B	1 2DICHLOROBENZENEBN	1 2DCBBN	5234		0005.000	0	0	0	1	2	2	2
49441	B	1 3DICHLOROBENZENEBN	1 3DCBBN	5222		0005.000	0	0	0	1	2	2	2
49442	B	1 4DICHLOROBENZENEBN	1 4DCBBN	5233		0005.000	0	0	0	1	2	2	2
49443	B	AZOBENZENE BN	AZOBENBN	5272		0005.000	0	0	0	1	2	2	2
49444	B	NITROBENZENE BTM NQA	NITBZBN	5247		0005.000	0	0	0	1	2	2	2
49446	B	CL5NITROBENZ BTN NQA	CL5NBZBN	5226		0005.000	0	0	0	1	2	2	2
49448	B	CL6BUTADIENE BTM NQA	CL6BDNBN	5229		0005.000	0	0	0	1	2	2	2
49449	B	9H-CARBAZOLE BN	9HCRBZBN	5278		0005.000	0	0	0	1	2	2	2
49450	B	CHRYSENE BTM NQA	CHRYSNBN	5225		0005.000	0	0	0	1	2	2	2
49451	B	P-CRESOL BN	P-CRESBN	5254		0005.000	0	0	0	1	2	2	2
49452	B	DIBENZOTHIOPHENE BN	DIBTHPBN	5275		0005.000	0	0	0	1	2	2	2
49453	B	CL6ETHANE BTM NQA	CL6ETHBN	5231		0005.000	0	0	0	1	2	2	2
49454	B	4-BRPHPHYLET BTM NQA	4BRPPEBN	5208		0005.000	0	0	0	1	2	2	2
49455	B	4CLPNLPNLETH BTM NQA	4CPPETBN	5209		0005.000	0	0	0	1	2	2	2
49456	B	B2CLETHYLETHR BTMNQA	B2CETEBN	5215		0005.000	0	0	0	1	2	2	2
49457	B	B2CLISOPETHR BTM NQA	B2CIPEBN	5216		0005.000	0	0	0	1	2	2	2
49458	B	BENZBFLUORAN BTM NQA	BZBFLNBN	5218		0005.000	0	0	0	1	2	2	2
49459	B	PCB'S TOTAL BTNQ	TOTPCBBN	5024		0050.000	0	1	2	2	2	2	2
49460	A	PENTACHLOROANISOLBN	CL5ANSBN	5033		0001.000	0	1	2	2	2	2	2
49460	B	PENTACHLOROANISOL BN	PCANISBN	5274		0005.000	0	0	0	1	2	2	2
49461	B	DIBZAHANTHRA BTM NQA	DBAHANBN	5232		0005.000	0	0	0	1	2	2	2
49465	B	VANADIUM BIO ICP DW	VBICP	6015		0000.500	0	0	1	2	3	3	3
49465	A	VANADIUM BIOICPMS DW	VBICPMS	6037		0000.100	0	0	1	2	3	3	3
49466	B	FLUORANTHENE BTM NQA	FLRNTHBN	5240		0005.000	0	0	0	1	2	2	2
49467	B	2 CHLOROPHENOL	2CHLRPHL	5289		0005.000	0	0	0	1	2	3	3
49468	B	BENZO(C)QUINOLINEBN	B(C)QUBN	5280		0005.000	0	0	0	1	2	2	2
49489	B	CL6CYPNTADNE BTM NQA	CL6CPDBN	5230		0005.000	0	0	0	1	2	2	2
49490	B	2-ETHYL-NAPHTHALENBN	2ETHAPBN	5264		0005.000	0	0	0	1	2	2	2
49902	A	S34/S32 AS S WATER	S34/S32	1948		0000.000	0	0	1	2	3	3	3
49926	A	CARBON-13/12,GAS CO2	C-13/12G	1244		0000.000	0	0	1	2	3	3	3
49927	A	C-13 SOLID	C13SOLID	2016		0000.000	0	1	2	3	3	3	3
49928	A	S34/S32 S04 SOLID	S34/S32	1950		0000.000	0	0	1	2	3	3	3
49928	B	S34/S32 S04 SOLID	S34/S32	1952		0000.000	0	0	1	2	3	3	3
49929	A	S34/S32 AS S SOLID	S34/S32	1947		0000.000	0	0	1	2	3	3	3
49930	A	S34/S32 DISULF SOLID	S34/S32	1953		0000.000	0	0	1	2	3	3	3
49931	A	S34/S32 MONOSULF SOL	S34/S32	1954		0000.000	0	0	1	2	3	3	3
49932	A	S34/S32 S04 RESIN	S34/S32	1949		0000.000	0	0	1	2	3	3	3
49932	B	S34/S32 S04 WATER	S34/S32	1951		0000.000	0	0	1	2	3	3	3
49933	A	C-14 AMS WATER	C-14 AMS	2010		0000.000	0	1	2	3	3	3	3
49934	A	C-14 AMS %ERROR	C-14A%ER	2011		0000.000	0	1	2	3	3	3	3
49935	B	C-14 BETA SOLID %ERR	C14BS%ER	2013		0000.000	0	1	2	3	3	3	3
49935	A	C14 AMS SOLID %ERR	C14AS%ER	2015		0000.000	0	1	2	3	3	3	3
49936	B	C-14 BETA SOLID	C14BETAS	2012		0000.000	0	1	2	3	3	3	3
49936	A	C-14 AMS SOLID	C14AMSS	2014		0000.000	0	1	2	3	3	3	3
49937	A	2SOE,G.GAMMA,DIS	2SOE,443	0877	00000000	0000.000	1	2	3	3	3	3	3
49939	A	2SPE PU-238 DIS	2SPE1963	1969		0000.000	1	2	3	3	3	3	3
49940	A	PLUTONIUM 239/240DIS	PU23940D	1965		0000.100	0	1	1	2	2	2	2
49941	A	2SPE PU-239/240 DIS	2SPE1965	1971		0000.000	1	2	3	3	3	3	3

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
49942	A	2SPE AM-241 DIS	2SPE1961	1967		0000.000	1	2	3	3	3	3	3
49960	A	GR ALPHA TH230 SUS	GATH230S	1854		0006.000	0	0	0	2	2	2	2
49961	A	2SPE GRALPHATH230SUS	2SPE1854	1855		0000.000	1	2	3	3	3	3	3
49962	A	GROSS BETA CS137-BTM	G.BCSBTM	1522		0003.000	0	0	0	2	2	2	2
49963	A	2SPE G.B-CS137 BTM	2SPE1522	1523		0000.000	1	2	3	3	3	3	3
49964	A	GR BETA CS-137 SUS	GBCS137S	1856		0003.000	0	0	0	2	2	2	2
49965	A	2SPE GR BETACS137SUS	2SPE1856	1857		0000.000	1	2	3	3	3	3	3
49968	A	2SPE,G.GAMMA,BTM.MAT	2SPE,212	0875	00000000	0000.000	0	2	2	2	2	2	2
49970	A	GAMMA SUS FF	GAMSFF	1861		0000.000	0	0	1	2	3	3	3
49971	A	2SPE GAMMA SUS FF	2SPE1861	1862		0000.000	0	0	1	2	3	3	3
49972	A	RA-226 DATING	RA-226DA	2006		0000.400	0	0	1	2	3	3	3
49973	A	2SPE RG-226 DATING	2SPE2007	2007		0000.000	0	0	1	2	3	3	3
49974	A	PLUTONIUM-238 SUS	PU238SUS	1964		0000.100	0	1	1	2	2	2	2
49975	A	2SPE PU-238 SUS	2SPE1964	1970		0000.000	1	2	3	3	3	3	3
49976	A	PLUTONIUM 239/240SUS	PU23940S	1966		0000.100	0	1	1	2	2	2	2
49977	A	2SPE PU-239/240 SUS	2SPE1966	1972		0000.000	1	2	3	3	3	3	3
49978	A	CS-137 DATING	CS137DAT	2004		0000.020	0	0	1	2	3	3	3
49979	A	2SPE CS-137 DATING	2SPE2004	2005		0000.000	0	0	1	2	3	3	3
49980	A	AMERICIUM-241 SUS	AM241SUS	1962		0000.100	0	1	1	2	2	2	2
49981	A	2SPE AM-241 SUS	2SPE1962	1968		0000.000	1	2	3	3	3	3	3
49991	Z	METHYL ACRYLATE	NAWQAVOC	5889		0000.000	3	3	3	3	3	3	3
49991	Y	METHYL ACRYLATE	NAWQAVOC	5965		0000.000	3	3	3	3	3	3	3
49999	Z	1234TETRAMETHYLBENZE	NAWQAVOC	5945		0000.000	3	3	3	3	3	3	3
49999	Y	1234TETRAMETHBENZENE	NAWQAVOC	5980		0000.000	3	3	3	3	3	3	3
50000	Z	1235TETRAMETHYLBENZE	NAWQAVOC	5944		0000.000	3	3	3	3	3	3	3
50000	Y	1235TETRAMETHBENZENE	NAWQAVOC	5979		0000.000	3	3	3	3	3	3	3
50002	Z	VINYL BROMIDE	NAWQAVOC	5868		0000.000	3	3	3	3	3	3	3
50002	Y	VINYL BROMIDE	NAWQAVOC	5953		0000.000	3	3	3	3	3	3	3
50004	Z	ETHYL-T-BUTYL ETHER	NAWQAVOC	5885		0000.000	3	3	3	3	3	3	3
50004	Y	ETHYL-T-BUTYL ETHER	NAWQAVOC	5963		0000.000	3	3	3	3	3	3	3
50005	Z	T-AMYL METHYL ETHER	NAWQAVOC	5899		0000.000	3	3	3	3	3	3	3
50005	Y	T-AMYL METHYL ETHER	NAWQAVOC	5968		0000.000	3	3	3	3	3	3	3
70300	A	ROE, DISS. AT 180 C	DS 180C	0027	I175085	0001.000	0	0	0	1	2	3	3
70953	A	CHLOROPHYLL-A PHY	C A PHCF	0586	B653079	0000.100	0	0	1	2	2	2	2
70954	A	CHLOROPHYLL-B PHY	C B PHCF	0587	B653079	0000.100	0	0	1	2	2	2	2
70957	A	CHLOROPHYLL-A PER	C A PECF	0588	B663079	0000.100	0	0	1	2	2	2	2
70958	A	CHLOROPHYLL-B PER	C B PECF	0589	B663079	0000.100	0	0	1	2	2	2	2
71820	A	DENSITY (20 DEG C)	DENSITY	0024	I131285	0000.990	0	0	3	4	0	0	0
71825	A	ACIDITY AS H	H+	0001	I102085	0000.100	0	0	1	2	2	3	3
71825	B	ACIDITY 2ND DVT AS H	H+LL	1266	I102290	0000.010	0	2	3	3	3	3	3
71865	D	IODIDE, DISSOLV. AUT	I. DIS.	1202	I237185	0000.001	1	2	2	2	2	2	2
71870	E	BROMIDE-AUTO-FLUOR	BR-AUTO	1246		0000.010	0	1	2	2	2	2	2
71870	F	BROMIDE-IC-LOW ION	BR-IC-LL	1258	I205885	0000.010	0	1	2	2	2	2	2
71890	B	MERCURY, DISSOLVED	HG DIS	0226	I246285	0000.100	0	0	1	2	2	2	2
71900	B	MERCURY, TOTAL	HG TOT	0227	I346285	0000.100	0	0	1	2	2	2	2
71900	C	HG WWR CVM DW	HGWRDW	2350		0000.000	0	0	1	2	2	2	2
71921	A	MERCURY, BTM MAT	HG B.M.	0511	I546285	0000.010	0	1	2	2	2	2	2
73547	Z	T-1 4DICHLORO2BUTENE	NAWQAVOC	5927		0000.000	3	3	3	3	3	3	3

Appendix C: Parameter Method Codes

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
73547	Y	T-14-DICHLORO2BUTENE	NAWQAVOC	5975		0000.000	3	3	3	3	3	3	3
73570	Z	ETHYL METHACRYLATE	NAWQAVOC	5909		0000.000	3	3	3	3	3	3	3
73570	Y	ETHYL METHACRYLATE	NAWQAVOC	5971		0000.000	3	3	3	3	3	3	3
75868	B	2SPE,PB210,BTM	2SPE1182	0876	0000000	0000.000	1	2	3	3	3	3	3
75936	A	2SPE TH232 SUS	2SPE1539	1540		0000.000	1	2	3	3	3	3	3
75937	A	RA-228 SUS H2O	RA228SUS	1533		0000.100	0	0	1	2	2	2	2
75938	A	PO210 SUS H2O	PO210SUS	1543		0000.100	0	0	1	2	2	2	2
75939	A	TH 230 SUS H2O	TH230SUS	1541		0000.100	0	0	1	2	2	2	2
75940	A	U-238-SUS-H2O	U-238SUS	1507		0000.100	0	0	1	2	2	2	2
75941	A	2SPE U-234 SUS	2SPE1474	1475		0000.000	1	2	3	3	3	3	3
75942	A	U-234 SUS H2O	U-234SUS	1474		0000.100	0	0	1	2	2	2	2
75943	A	2SPE RA226 SUS	2SPE1531	1532		0000.000	1	2	3	3	3	3	3
75944	A	RA-226 SUS H2O	RA226SUS	1531		0000.100	0	0	1	2	2	2	2
75945	A	2SPE PO210 SUS	2SPE1543	1544		0000.000	1	2	3	3	3	3	3
75946	A	PB210 SUS H2O	PB21SUS	1547		0000.150	2	0	1	0	2	2	2
75947	A	2SPE-U-235-SUS	2SPE1476	1450		0000.000	1	2	3	3	3	3	3
75948	A	2SPE RA-228 SUS	2SPE1533	1534		0000.000	1	2	3	3	3	3	3
75949	A	2SPE PB210 SUS	2SPE1547	1548		0000.000	1	2	3	3	3	3	3
75952	A	2SPE TH230 SUS	2SPE1541	1542		0000.000	1	2	3	3	3	3	3
75953	A	TH 232 SUS H2O	TH232SUS	1539		0000.100	0	0	1	2	2	2	2
75955	A	2SPE G.S. TH BTM	2SPE1520	1521		0000.000	1	2	3	3	3	3	3
75962	A	2SPE U-238 BTM	2SPE1511	1517		0000.000	1	2	3	3	3	3	3
75968	C	2SPE PB210 BTM	2SPE1549	1550		0000.000	1	2	3	3	3	3	3
75975	A	U-235-SUS-H2O	U-235SUS	1476		0000.100	0	0	1	2	2	2	2
75976	A	TH232DISH2O	TH232DIS	1501		0001.000	0	0	0	2	2	2	2
75977	A	RA-228 BTM GAMMA	RA228BTM	1526		0000.800	0	0	1	2	2	2	2
75980	A	DE-ISOPROPYLATRA WWR	DISO WWR	1613	O310691	0000.200	0	1	2	2	2	2	2
75981	A	DE-ETHYLATRAZINE WWR	DETH WWR	1612	O310691	0000.200	0	1	2	2	2	2	2
75985	D	2SPE,H3,DIR,LIQ.SCIN	2SPE,452	0879	R117176	0000.000	0	0	0	0	2	2	2
75985	A	2SPE,H3,ENR,LIQ.SCIN	2SPE,460	0882	R117176	0000.000	0	0	1	2	2	2	2
75985	B	2SPE,H3,ENR,GAS CT	2SPE1043	0883	0000000	0000.000	0	0	1	2	2	2	2
75985	E	2SPE,TRIT,EMR,LL,LS	2SPE,624	1000		0000.000	0	0	0	2	2	2	2
75985	F	2SPE-H3-LL-EE-LS	2SPE1565	1566	R117476	0000.000	0	0	0	1	2	2	2
75985	G	2SPE-H3-GAS-COUNT	2SPE1567	1568		0000.000	0	0	0	0	2	2	2
75987	B	2SPE,GA,D,FF,TH230	2SPE1397	1398		0000.000	1	2	3	3	3	3	3
75987	D	2SPE,GA,HS,TH,FF	2SPE1445	1446		0000.000	1	2	3	3	3	3	3
75989	B	2SPE,G.B,CS137,DS,FF	2SPE,798	0854	R112076	0000.000	1	2	3	3	3	3	3
75989	D	2SPE,GB,HS,CS137,FF	2SPE1360	1375		0000.000	1	2	3	3	3	3	3
75990	H	2SPE,U,DIS,FLUOR,FF	2SPE1006	1007		0000.000	1	2	3	3	3	3	3
75990	C	2SPE,U,DIR,LIP,FF	2SPE1385	1389		0000.000	1	2	3	3	3	3	3
75990	E	2SPE,U,EXT,LIP,FF	2SPE1386	1390		0000.000	1	2	3	3	3	3	3
75991	A	2SPE,U-238	2SPE1368	1383		0000.000	1	2	3	3	3	3	3
75992	A	2SPE,U-234	2SPE1366	1381		0000.000	1	2	3	3	3	3	3
75994	A	2SPE,U-235	2SPE1367	1382		0000.000	1	2	3	3	3	3	3
75995	B	2SPEPB210DISH2O	2SPE1503	1504		0000.000	1	2	3	3	3	3	3
75997	B	2SPE TH230 DIS	2SPE1472	1473		0000.000	1	2	3	3	3	3	3
75998	A	2SPEPO210DISH2O	2SPE1505	1506		0000.000	1	2	3	3	3	3	3
75999	A	2SPETH230DISH2O	2SPE1501	1502		0000.000	1	2	3	3	3	3	3

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
76000	A	2SPE,RA228,DS,G.SCAN	2SPE,850	0866	R114276	0000.000	1	2	3	3	3	3	3
76000	C	2SPE,RA228,RC,FF	2SPE1364	1379		0000.000	1	2	3	3	3	3	3
76001	A	2SPE,RA226,DS,DE,FF	2SPE,794	0861	R114176	0000.000	0	1	2	2	2	2	2
76001	B	2SPE,RA226,DS,PC,FF	2SPE,799	0864	R114076	0000.000	1	2	3	3	3	3	3
76002	A	2SPE,RN222,DSH2O,DE	2SPE,490	0865	R114677	0000.000	0	1	2	2	2	2	2
76002	B	2SPE,RN222,H2O,LIQSC	2SPE1369	1384		0000.000	1	2	3	3	3	3	3
76003	B	2SPE,SR90,DS,PPT,FF	2SPE,795	0873	R116076	0000.000	1	2	3	3	3	3	3
77041	A	CARBON DISULFIDE	CRBNDISF	1846		0000.200	0	0	0	0	0	0	0
77041	Z	CARBON DISULFIDE	NAWQAVOC	5876		0000.000	3	3	3	3	3	3	3
77041	Y	CARBON DISULFIDE	NAWQAVOC	5958		0000.000	3	3	3	3	3	3	3
77057	A	VINYL ACETATE	VNYLACET	1847		0020.000	0	0	0	0	0	0	0
77057	Z	VINYL ACETATE	NAWQAVOC	5883		0000.000	3	3	3	3	3	3	3
77057	Y	VINYL ACETATE	NAWQAVOC	5961		0000.000	3	3	3	3	3	3	3
77093	A	CIS-12DICHLOROETHENE	12CDCE	1656		0000.200	0	0	1	2	2	2	2
77093	B	CIS-12DICHLOROETHENE	12CDCE	1657		0003.000	0	0	1	2	2	2	2
77093	D	CISDICLETH EPA524.2	CIDCEEPA	2236		0000.200	0	0	2	2	3	3	3
77093	C	CIS-12DICHLOROETHENE	12CDCE	5814		0000.200	0	0	1	2	2	2	2
77093	Z	C-1 2-DICHLOROETHENE	NAWQAVOC	5887		0000.000	3	3	3	3	3	3	3
77103	A	2-HEXANONE	2HEXNONE	1849		0020.000	0	0	0	0	0	0	0
77103	Z	2-HEXANONE	NAWQAVOC	5913		0000.000	3	3	3	3	3	3	3
77103	Y	2-HEXANONE	NAWQAVOC	5972		0000.000	3	3	3	3	3	3	3
77128	A	STYRENE	STYRENE	1325	O311583	0003.000	0	0	1	2	2	2	2
77128	B	STYRENE	STYRENE	1328	O524 2	0000.200	0	0	1	2	2	2	2
77128	D	STYRENE EPA524.2	STYREEPA	2253		0000.200	0	0	2	2	3	3	3
77128	C	STYRENE	STYRENE	5837	O524 2	0000.200	0	0	1	2	2	2	2
77128	Z	STYRENE	NAWQAVOC	5921		0000.000	3	3	3	3	3	3	3
77135	B	XYLENE ORTHO WWR	OXYLENE	1709	EPA5242	0000.200	0	0	1	2	2	2	2
77135	A	XYLENE ORTHO HL WWR	OXYLN HL	1710	EPA5242	0003.000	0	0	0	1	2	2	2
77135	C	O-XYLENE EPA524.2	OXYLEPA	2252		0000.200	0	0	2	2	3	3	3
77135	Z	O-XYLENE	NAWQAVOC	5920		0000.000	3	3	3	3	3	3	3
77135	Y	O-XYLENE	NAWQAVOC	5974		0000.000	3	3	3	3	3	3	3
77168	B	11DICHLORO1PROPENE	11DICHLO	1478	D311583	0000.200	0	0	1	2	2	2	2
77168	A	1 1 CL 2-PROPENE -TH	CL2PRENE	1689	E524 2	0003.000	0	0	0	2	2	2	2
77168	C	11DICHLORO1PROPENE	11DICHLO	5818	D311583	0000.200	0	0	1	2	2	2	2
77168	Z	1 1-DICHLOROPROPENE	NAWQAVOC	5896		0000.000	3	3	3	3	3	3	3
77170	B	22DICHLOROPROPANE	22DICHLO	1479	D311583	0000.200	0	0	1	2	2	2	2
77170	A	22DICHLOROPROPA-NET-H	22DCPANE	1691	EPA5242	0003.000	0	0	0	2	2	2	2
77170	C	22DICHLOROPROPANE	22DICHLO	5812	D311583	0000.200	0	0	1	2	2	2	2
77170	Z	2 2-DICHLOROPROPANE	NAWQAVOC	5886		0000.000	3	3	3	3	3	3	3
77173	B	13DICHLOROPROPANE	13DICHLO	1480	D311583	0000.200	0	0	1	2	2	2	2
77173	A	13DICHLOROPROPANE TH	13DCPANE	1692	EPA5242	0003.000	0	0	0	2	2	2	2
77173	C	13DICHLOROPROPANE	13DICHLO	5830	D311583	0000.200	0	0	1	2	2	2	2
77173	Z	1 3-DICHLOROPROPANE	NAWQAVOC	5912		0000.000	3	3	3	3	3	3	3
77220	Z	2-ETHYL TOLUENE	NAWQAVOC	5932		0000.000	3	3	3	3	3	3	3
77220	Y	2-ETHYL TOLUENE	NAWQAVOC	5976		0000.000	3	3	3	3	3	3	3
77221	Z	123-TRIMETHYLBENZENE	NAWQAVOC	5939		0000.000	3	3	3	3	3	3	3
77221	Y	123-TRIMETHYLBENZENE	NAWQAVOC	5977		0000.000	3	3	3	3	3	3	3
77222	A	124-TRIMETHYLBENZENE	1 2 4TMB	1665		0000.200	0	0	1	2	2	2	2

Appendix C: Parameter Method Codes

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
77222	B	124-TRIMETHYLBENZENE	1 2 4TMB	1666		0003.000	0	0	1	2	2	2	2
77222	C	124-TRIMETHYLBENZENE	1 2 4TMB	5846		0000.200	0	0	1	2	2	2	2
77222	Z	124-TRIMETHYLBENZENE	NAWQAVOC	5934		0000.000	3	3	3	3	3	3	3
77223	A	ISOPROPYLBENZENE	IPBENZ	1659		0000.200	0	0	1	2	2	2	2
77223	B	ISOPROPYLBENZENE	IPBENZ	1660		0003.000	0	0	1	2	2	2	2
77223	C	ISOPROPYLBENZENE	IPBENZ	5839		0000.200	0	0	1	2	2	2	2
77223	Z	ISOPROPYLBENZENE	NAWQAVOC	5923		0000.000	3	3	3	3	3	3	3
77224	A	N-PROPYLBENZENE	NPBENZ	1661		0000.200	0	0	1	2	2	2	2
77224	B	N-PROPYLBENZENE	NPBENZ	1662		0003.000	0	0	1	2	2	2	2
77224	C	N-PROPYLBENZENE	NPBENZ	5843		0000.200	0	0	1	2	2	2	2
77224	Z	N-PROPYLBENZENE	NAWQAVOC	5928		0000.000	3	3	3	3	3	3	3
77226	A	135 TRIMETHYLBENZENE	135TMB	1683		0000.200	0	0	1	2	2	2	2
77226	B	135 TRIMETHYLBENZENE	135TMB	1684		0003.000	0	0	1	2	2	2	2
77226	C	135 TRIMETHYLBENZENE	135TMB	5860		0000.200	0	0	1	2	2	2	2
77226	Z	135-TRIMETHYLBENZENE	NAWQAVOC	5931		0000.000	3	3	3	3	3	3	3
77275	B	12CHLOROTOLUENE	12CHLORO	1481	D311583	0000.200	0	0	1	2	2	2	2
77275	A	2 CHLOROTOLUENE -TH	2CLTOL	1694	EPA5242	0003.000	0	0	0	2	2	2	2
77275	C	12CHLOROTOLUENE	12CHLORO	5844	D311583	0000.200	0	0	1	2	2	2	2
77275	Z	2-CHLOROTOLUENE	NAWQAVOC	5929		0000.000	3	3	3	3	3	3	3
77277	B	14CHLOROTOLUENE	14CHLORO	1482	D311583	0000.200	0	0	1	2	2	2	2
77277	A	4-CHLOROTOLUENE T-H	4CLTOL	1696	EPA5242	0003.000	0	0	0	2	2	2	2
77277	C	14CHLOROTOLUENE	14CHLORO	5858	D311583	0000.200	0	0	1	2	2	2	2
77277	Z	4-CHLOROTOLUENE	NAWQAVOC	5930		0000.000	3	3	3	3	3	3	3
77297	A	BROMOCHLOROMETHANE	BCMANE	1654		0000.200	0	0	1	2	2	2	2
77297	B	BROMOCHLOROMETHANE	BCMANE	1655		0003.000	0	0	1	2	2	2	2
77297	C	BROMOCHLOROMETHANE	BCMANE	5813		0000.200	0	0	1	2	2	2	2
77297	Z	BROMOCHLOROMETHANE	NAWQAVOC	5890		0000.000	3	3	3	3	3	3	3
77342	A	N-BUTYLBENZENE	NBBENZ	1671		0000.200	0	0	1	2	2	2	2
77342	B	N-BUTYLBENZENE	NBBENZ	1672		0003.000	0	0	1	2	2	2	2
77342	C	N-BUTYLBENZENE	NBBENZ	5851		0000.200	0	0	1	2	2	2	2
77342	Z	N-BUTYLBENZENE	NAWQAVOC	5941		0000.000	3	3	3	3	3	3	3
77350	A	SEC-BUTYLBENZENE	SBBENZ	1667		0000.200	0	0	1	2	2	2	2
77350	B	SEC-BUTYLBENZENE	SBBENZ	1668		0003.000	0	0	1	2	2	2	2
77350	C	SEC-BUTYLBENZENE	SBBENZ	5847		0000.200	0	0	1	2	2	2	2
77350	Z	SEC-BUTYLBENZENE	NAWQAVOC	5935		0000.000	3	3	3	3	3	3	3
77353	A	TERTBUTYLBENZENE	TBBENZ	1663		0000.200	0	0	1	2	2	2	2
77353	B	TERTBUTYLBENZENE	TBBENZ	1664		0003.000	0	0	1	2	2	2	2
77353	C	TERTBUTYLBENZENE	TBBENZ	5845		0000.200	0	0	1	2	2	2	2
77353	Z	TERTBUTYLBENZENE	NAWQAVOC	5933		0000.000	3	3	3	3	3	3	3
77356	A	P-ISOPROPYLtoluene	P-IPTOL	1669		0000.200	0	0	1	2	2	2	2
77356	B	P-ISOPROPYLtoluene	P-IPTOL	1670		0003.000	0	0	1	2	2	2	2
77356	C	P-ISOPROPYLtoluene	P-IPTOL	5848		0000.200	0	0	1	2	2	2	2
77356	Z	P-ISOPROPYLtoluene	NAWQAVOC	5937		0000.000	3	3	3	3	3	3	3
77424	Z	IODOMETHANE	NAWQAVOC	5875		0000.000	3	3	3	3	3	3	3
77424	Y	IODOMETHANE	NAWQAVOC	5957		0000.000	3	3	3	3	3	3	3
77441	A	1-NAPHTHOL WWR	1-NAPHTH	1351	O310790	0000.028	0	0	1	2	2	2	2
77443	B	123TRICHLOROPROPRANE	123TRICH	1483	D311583	0000.200	0	0	1	2	2	2	2
77443	A	123 TRICHLOROPROPATH	123TCP	1695	EPA5242	0003.000	0	0	0	2	2	2	2

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
77443	C	123TRICHLOROPROPRANE	123TRICH	5842	D311583	0000.200	0	0	1	2	2	2	2
77443	Z	123-TRICHLOROPROPANE	NAWQAVOC	5926		0000.000	3	3	3	3	3	3	3
77562	B	1112TETRACHLOROETHAN	1112TETR	1484	D311583	0000.200	0	0	1	2	2	2	2
77562	A	1 1 1 2 CL4ETHANE -TH	C14ETHAN	1693	EPA5242	0003.000	0	0	0	2	2	2	2
77562	C	1112TETRACHLOROETHAN	1112TETR	5834	D311583	0000.200	0	0	1	2	2	2	2
77562	Z	1112TETRACHLOROETHAN	NAWQAVOC	5917		0000.000	3	3	3	3	3	3	3
77613	A	123-TRICHLOROBENZENE	123TCBNZ	1679		0000.200	0	0	1	2	2	2	2
77613	B	123-TRICHLOROBENZENE	123TCBNZ	1680		0003.000	0	0	1	2	2	2	2
77613	C	123-TRICHLOROBENZENE	123TCBNZ	5857		0000.200	0	0	1	2	2	2	2
77613	Z	123-TRICHLOROBENZENE	NAWQAVOC	5949		0000.000	3	3	3	3	3	3	3
77651	B	1,2-DIBROMOETHANE ,T	EDB	1317	E524 2	0000.200	0	0	1	2	2	2	2
77651	C	1,2-DIBROMOETHANE ,T	EDB	1319	O311583	0003.000	0	0	1	2	2	2	2
77651	D	1 2-DIBROMOETHANE	EDB	1577	O312090	0000.040	0	1	2	2	2	2	2
77651	F	1-2DIBRETHANE EPA504	EDBEPA	2262		0000.050	0	2	3	3	3	3	3
77651	E	1 2-DIBROMOETHANE T	EDB	5832	E524 2	0000.200	0	0	1	2	2	2	2
77651	Z	1 2-DIBROMOETHANE	NAWQAVOC	5915		0000.000	3	3	3	3	3	3	3
77652	A	ETHANE CL3F3	TCTFANE	1681		0000.200	0	0	1	2	2	2	2
77652	B	ETHANE CL3F3	TCTFANE	1682		0003.000	0	0	1	2	2	2	2
77652	C	ETHANE CL3F3	TCTFANE	5859		0000.200	0	0	1	2	2	2	2
77652	Z	FREON 113	NAWQAVOC	5873		0000.000	3	3	3	3	3	3	3
77825	C	ALACHLOR WWR	ALACHLOR	1331	O310691	0000.100	0	0	1	2	2	2	2
77825	D	ALACHLOR EPA 507	ALACHEPA	2211		0000.100	1	2	3	3	3	3	3
77903	A	B2ETHERADIPEPA525.2	BADIPEPA	2216		0000.000	0	0	1	2	3	3	3
78032	A	METHYLTERTBUTYLETHER	MTBE	1652		0000.200	0	0	1	2	2	2	2
78032	B	METHYLTERTBUTYLETHER	MTBE	1653		0003.000	0	0	1	2	2	2	2
78032	C	METHYLTERTBUTYLETHER	MTBE	5810		0000.200	0	0	1	2	2	2	2
78032	Z	METHYL-T-BUTYL ETHER	NAWQAVOC	5881		0000.000	3	3	3	3	3	3	3
78109	Z	3-CHLORO-1-PROPENE	NAWQAVOC	5877		0000.000	3	3	3	3	3	3	3
78109	Y	3-CHLORO-1-PROPENE	NAWQAVOC	5959		0000.000	3	3	3	3	3	3	3
78133	A	4 METHY-2-PENTANONE	4ME2PENT	1845		0020.000	0	0	0	0	0	0	0
78133	Z	4-METHYL-2-PENTANONE	NAWQAVOC	5906		0000.000	3	3	3	3	3	3	3
78133	Y	4-METHYL-2-PENTANONE	NAWQAVOC	5970		0000.000	3	3	3	3	3	3	3
81353	A	BIOMASS ASH WT (PHY)	BI AH PH	0621	B656079	0000.100	0	0	1	2	3	3	3
81354	A	BIOMASS DRY WT (PHY)	BI DY PH	0620	B656079	0000.100	0	0	1	2	3	3	3
81358	A	TNT, DISSOLVED	TNT DISS	0551	O160180	0000.010	0	1	2	2	2	2	2
81359	A	TNT, SUSPENDED	TNT SUSP	0552	O260180	0000.010	0	1	2	2	2	2	2
81360	B	TNT, TOTAL, (WATER)	TNT TOT	0397	O360180	0000.010	0	1	2	2	2	2	2
81360	C	TNT, TOTAL	TNT ,TOT.	1041	O360580	0002.000	0	0	0	1	2	2	2
81362	A	RDX, DISSOLVED	RDX DISS	0553	O160180	0000.010	0	1	2	2	2	2	2
81363	A	RDX, SUSPENDED	RDX SUSP	0554	O260180	0000.010	0	1	2	2	2	2	2
81364	C	RDX TOTAL, (WATER)	RDX TOT	0396	O360180	0000.010	0	1	2	2	2	2	2
81364	B	RDX, TOTAL	RDX ,TOT	1042	O360580	0002.000	0	0	0	1	2	2	2
81365	A	RDX, BTM. MAT.	RDX BTM	0398		0000.100	0	0	1	2	2	2	2
81366	A	RADIUM-228, DISSOLV.	RA-228,D	0850	R114276	0001.000	0	0	0	1	2	2	2
81366	C	RA-228,RC,NOT226,FF	RA228,R	1364		0001.000	0	0	1	2	2	2	2
81551	A	XYLENE, TOTAL	XYLENE ,T	1329	O311583	0003.000	0	0	1	2	2	2	2
81551	B	XYLENE, TOTAL	XYLENE ,T	1330	O524 2	0000.200	0	0	1	2	2	2	2
81551	C	XYLENE TOTAL	XYLENE T	5836	O524 2	0000.200	0	0	1	2	2	2	2

Appendix C: Parameter Method Codes

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
81552	A	ACETONE	ACETONE	1844		0020.000	0	0	0	0	0	0	0
81552	Z	ACETONE	NAWQAVOC	5874		0000.000	3	3	3	3	3	3	3
81552	Y	ACETONE	NAWQAVOC	5956		0000.000	3	3	3	3	3	3	3
81555	B	BROMOBENZENE	BROMOBEN	1485	D311583	0003.000	0	0	1	2	2	2	2
81555	A	BROMOBENZENE	BROMOBEN	1698	EPA5242	0000.200	0	0	1	2	2	2	2
81555	C	BROMOBENZENE	BROMOBEN	5841	EPA5242	0000.200	0	0	1	2	2	2	2
81555	Z	BROMOBENZENE	NAWQAVOC	5924		0000.000	3	3	3	3	3	3	3
81576	Z	DIETHYLETHER	NAWQAVOC	5870		0000.000	3	3	3	3	3	3	3
81576	Y	DIETHYLETHER	NAWQAVOC	5954		0000.000	3	3	3	3	3	3	3
81577	Z	DIISOPROPYLETHER	NAWQAVOC	5884		0000.000	3	3	3	3	3	3	3
81577	Y	DIISOPROPYLETHER	NAWQAVOC	5962		0000.000	3	3	3	3	3	3	3
81593	Z	METHYL ACRYLONITRILE	NAWQAVOC	5891		0000.000	3	3	3	3	3	3	3
81593	Y	METHYL ACRYLONITRILE	NAWQAVOC	5966		0000.000	3	3	3	3	3	3	3
81595	A	2-BUTANONE	2BUTNONE	1850		0020.000	0	0	0	0	0	0	0
81595	Z	2-BUTANONE	NAWQAVOC	5888		0000.000	3	3	3	3	3	3	3
81595	Y	2-BUTANONE	NAWQAVOC	5964		0000.000	3	3	3	3	3	3	3
81597	Z	METHYL METHACRYLATE	NAWQAVOC	5903		0000.000	3	3	3	3	3	3	3
81597	Y	METHYL METHACRYLATE	NAWQAVOC	5969		0000.000	3	3	3	3	3	3	3
81607	Z	TETRAHYDROFURAN	NAWQAVOC	5892		0000.000	3	3	3	3	3	3	3
81607	Y	TETRAHYDROFURAN	NAWQAVOC	5967		0000.000	3	3	3	3	3	3	3
81757	A	CYANAZINE WWR	CYNZ TOT	0846	O310691	0000.200	0	0	1	2	2	2	2
81886	A	PERTHANE, BTM MAT	PERTHN B	0342	O510483	0001.000	0	0	0	1	2	2	2
82052	A	DICAMBA, TOTAL	DICAMTOT	0749	O310583	0000.010	0	1	2	2	2	2	2
82081	A	CARBON-13/12 (RATIO)	C-13/12R	0440		0000.000	0	0	1	2	3	3	3
82082	B	DEUTERIUM/PROTIUM.AQ	D/P.AQ	1574		0000.000	0	0	1	2	3	3	0
82085	A	O 18/16 SIRA PER MIL	OXY18/16	0489		0000.000	1	1	2	3	4	5	5
82170	A	AU-SUSP SED-UGG-GD	AU-SUSED	2025		0008.000	0	1	2	2	2	2	2
82172	B	CARBON-14 (FLD PPT)	C-14 PPT	1199	R110076	0000.000	0	0	1	2	3	4	4
82183	A	2,4-DP, TOT. (WATER)	24DP TOT	0402	O310583	0000.010	0	1	2	2	2	2	2
82184	A	AMETRYNE WWR	ATYN TOT	0848	O310691	0000.100	0	0	1	2	2	2	2
82185	A	ATRATONE, TOTAL	ATON TOT	0847	O310683	0000.100	0	0	1	2	2	2	2
82187	A	CYPRAZINE, TOTAL	CYPZ TOT	0845	O310683	0000.100	0	0	1	2	2	2	2
82188	A	SIMETONE, TOTAL	STON TOT	0843	O310683	0000.100	0	0	1	2	2	2	2
82303	B	RN222,DIS H2O,LIQ SC	RN222,LS	1369		0024.000	0	0	0	0	2	2	2
82305	A	RADON-222 DIS. WATER	RN-222-W	0490	R114679	0000.200	0	0	1	2	2	2	2
82337	A	O-18/O-16 CALCITE	O-18/16R	1137		0000.000	0	0	1	2	3	3	3
82339	A	C-13/C-12 CALCITE	C-13/12R	1135		0000.000	0	0	1	2	3	3	3
82340	A	PICRIC ACID, TOTAL	PICRIC A	1040	O360580	0002.000	0	0	0	1	2	2	2
82342	A	TRITHION, DISSOLVED	TRIT DIS	0428	O110483	0000.010	0	1	2	2	2	2	2
82343	A	TRITHION, SUSPENDED	TRIT SUS	0422	O710483	0000.000	1	2	3	4	5	6	7
82345	A	METHYLTRITHION, SUS.	ME.TR.S.	0485	O710483	0000.000	1	2	3	4	5	6	7
82346	A	ETHION, DISSOLVED	ETHI DIS	0424	O110483	0000.010	0	1	2	2	2	2	2
82347	A	ETHION, SUSPENDED	ETHI SUS	0418	O710483	0000.000	1	2	3	4	5	6	7
82348	A	PERTHANE, DISSOLVED	PERTHN D	0344	O110483	0000.100	0	0	1	2	2	2	2
82349	A	PERTHANE, SUSPENDED	PERTHN S	0343	O710483	0000.100	0	0	1	2	2	2	2
82350	A	METHOXYCHLOR, DIS.	METH DIS	0476	O110483	0000.010	0	1	2	2	2	2	2
82351	A	METHOXYCHLOR, SUSPEN	METH SUS	0416	O710483	0000.010	0	1	2	2	2	2	2
82354	A	ENDOSULFAN, DISSOLV.	ENDOS D	0345	O110483	0000.010	0	1	2	2	2	2	2

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A B C D E F G						
							A	B	C	D	E	F	G
82355	A	ENDOSULFAN, SUS.	ENDOS S	0347	O310483	0000.010	0	1	2	2	2	2	2
82356	A	2,4-DP, DISSOLVED	2,4-DP D	0487	O110583	0000.010	0	1	2	2	2	2	2
82357	A	ETHYLENE, TOTAL	ETHYLENE	0609	O311483	0000.100	0	0	1	2	2	2	2
82358	A	PROPANE, TOTAL	PROPANE	0610	O311483	0000.100	0	0	1	2	2	2	2
82360	A	GROSS PCNS, DISSOLV.	PCN DISS	0475	O110483	0000.100	0	0	1	2	2	2	2
82361	A	GROSS PCNS, SUSPENDE	PCN SUS	0415	O710483	0000.100	0	0	1	2	2	2	2
82611	C	METRIBUZIN WWR	METRIBUZ	1333	O310691	0000.100	0	0	1	2	2	2	2
82612	C	METOLACHLOR WWR	METOLACH	1334	O310691	0000.200	0	0	1	2	2	2	2
82614	C	FONOFOS TOTAL	FONOFOS	1336	O310483	0000.010	0	2	2	2	2	2	2
82615	C	CARBOFURAN WWR	CARBOFUR	1337	O310790	0000.013	0	0	1	2	2	2	2
82619	C	ALDICARB WWR	ALDICARB	1338	O310790	0000.023	0	0	1	2	2	2	2
82621	A	HEXACHLOROBENZENE	HEXABENZ	1347	O310483	0000.010	0	2	2	2	2	2	2
82625	A	DIBROMOCHLOROPROPANE	DBCP	1349	O311583	0003.000	0	0	0	2	2	2	2
82625	B	DIBROMOCHLOROPROPANE	DBCP	1354	O311583	0001.000	0	0	0	2	2	2	2
82625	D	1,2-DIBR-3-CLPROPANE	DBCP	1576	O312090	0000.030	0	1	2	2	2	2	2
82625	E	1-2DIBR3CLNEOPEPA504	DBCPEPA	2263		0000.050	0	2	3	3	3	3	3
82625	C	DIBROMOCHLOROPROPANE	DBCP	5853	O311583	0001.000	0	0	0	2	2	2	2
82625	Z	DIBROMOCHLOROPROPANE	NAWQAVOC	5943		0000.000	3	3	3	3	3	3	3
82626	A	1,2-DIPHENYLHYDR2NWR	12DP4	1697	O311688	0005.000	0	0	1	2	2	2	2
82628	A	OCTACHLOROSTYRENE	OCTASTYR	1348	O310483	0000.010	0	2	2	2	2	2	2
82630	A	METRIBUZIN DISSOLVED	METRBZ D	1594	O112192	0000.050	0	1	2	2	2	2	2
82630	D	METRIBUZIN D LE	METRIBDL	4030		0000.000	1	2	2	2	1	1	1
82630	E	METRIBUZIN D FE	METRIBDF	4230		0000.000	1	2	2	2	1	1	1
82660	D	DIETHYLANALINE D LE	ANALINDL	4016		0000.000	1	2	2	2	1	1	1
82660	E	DIETHYLANALINE D FE	ANALINDF	4216		0000.000	1	2	2	2	1	1	1
82661	D	TRIFLURALIN D LE	TRIFLUDL	4050		0000.000	1	2	2	2	1	1	1
82661	E	TRIFLURALIN D FE	TRIFLUDF	4250		0000.000	1	2	2	2	1	1	1
82662	D	DIMETHOATE D LE	DIMETHDL	4017		0000.000	1	2	2	2	1	1	1
82662	E	DIMETHOATE D FE	DIMETHDF	4217		0000.000	1	2	2	2	1	1	1
82663	D	ETHALFLURALIN D LE	ETHALFDL	4020		0000.000	1	2	2	2	1	1	1
82663	E	ETHALFLURALIN D FE	ETHALFDF	4220		0000.000	1	2	2	2	1	1	1
82664	D	PHORATE D LE	PHORATDL	4037		0000.000	1	2	2	2	1	1	1
82664	E	PHORATE D FE	PHORATDF	4237		0000.000	1	2	2	2	1	1	1
82665	D	TERBACIL D LE	TERBACDL	4046		0000.000	1	2	2	2	1	1	1
82665	E	TERBACIL D FE	TERBACDF	4245		0000.000	1	2	2	2	1	1	1
82666	D	LINURON D LE	LINURNDL	4026		0000.000	1	2	2	2	1	1	1
82666	E	LINURON D FE	LINURNDF	4226		0000.000	1	2	2	2	1	1	1
82667	D	METHYL PARATHION DLE	MEPARADL	4028		0000.000	1	2	2	2	1	1	1
82667	E	METHYL PARATHION DFE	MEPARADF	4228		0000.000	1	2	2	2	1	1	1
82668	D	EPTC D LE	EPTC DL	4019		0000.000	1	2	2	2	1	1	1
82668	E	EPTC D FE	EPTC DF	4219		0000.000	1	2	2	2	1	1	1
82669	D	PEBULATE D LE	PEBULADL	4034		0000.000	1	2	2	2	1	1	1
82669	E	PEBULATE D FE	PEBULADF	4234		0000.000	1	2	2	2	1	1	1
82670	D	TEBUTHIURON D LE	TEBUTHDL	4045		0000.000	1	2	2	2	1	1	1
82670	E	TEBUTHIURON D FE	TEBUTHDF	4244		0000.000	1	2	2	2	1	1	1
82671	D	MOLINATE D LE	MOLIN DL	4031		0000.000	1	2	2	2	1	1	1
82671	E	MOLINATE D FE	MOLIN DF	4231		0000.000	1	2	2	2	1	1	1
82672	D	ETHOPROP D LE	ETHOPRDL	4021		0000.000	1	2	2	2	1	1	1

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Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
82672	E	ETHOPROP D FE	ETHOPRDF	4221		0000.000	1	2	2	2	1	1	1
82673	D	BENFLURALIN D LE	BENFLUDL	4005		0000.000	1	2	2	2	1	1	1
82673	E	BENFLURALIN D FE	BENFLUDF	4205		0000.000	1	2	2	2	1	1	1
82674	D	CARBOFURAN D LE	CARBOFDL	4008		0000.000	1	2	2	2	1	1	1
82674	E	CARBOFURAN D FE	CARBOFDF	4208		0000.000	1	2	2	2	1	1	1
82675	D	TERBUFOS D LE	TERBUFDL	4047		0000.000	1	2	2	2	1	1	1
82675	E	TERBUFOS D FE	TERBUFDF	4246		0000.000	1	2	2	2	1	1	1
82676	D	PRONAMIDE D LE	PRONAMDL	4038		0000.000	1	2	2	2	1	1	1
82676	E	PRONAMIDE D FE	PRONAMDF	4239		0000.000	1	2	2	2	1	1	1
82677	D	DISULFOTON D LE	DISULFDL	4018		0000.000	1	2	2	2	1	1	1
82677	E	DISULFOTON D FE	DISULFDF	4218		0000.000	1	2	2	2	1	1	1
82678	D	TRIALLATE D LE	TRIALLDL	4049		0000.000	1	2	2	2	1	1	1
82678	E	TRIALLATE D FE	TRIALLDF	4249		0000.000	1	2	2	2	1	1	1
82679	D	PROPANIL D LE	PROPANDL	4041		0000.000	1	2	2	2	1	1	1
82679	E	PROPANIL D FE	PROPANDF	4241		0000.000	1	2	2	2	1	1	1
82680	D	CARBARYL D LE	CARBARDL	4007		0000.000	1	2	2	2	1	1	1
82680	E	CARBARYL D FE	CARBARDF	4207		0000.000	1	2	2	2	1	1	1
82681	D	THIOBENCARB D LE	THIOBEDL	4044		0000.000	1	2	2	2	1	1	1
82681	E	THIOBENCARB D FE	THIOBEDE	4248		0000.000	1	2	2	2	1	1	1
82682	D	DCPA D LE	DCPA DL	4011		0000.000	1	2	2	2	1	1	1
82682	E	DCPA D FE	DCPA DF	4211		0000.000	1	2	2	2	1	1	1
82683	D	PENDIMETHALIN D LE	PENDIMDL	4035		0000.000	1	2	2	2	1	1	1
82683	E	PENDIMETHALIN D FE	PENDIMDF	4235		0000.000	1	2	2	2	1	1	1
82684	D	NAPROPAMIDE D LE	NAPROPDL	4032		0000.000	1	2	2	2	1	1	1
82684	E	NAPROPAMIDE D FE	NAPROPDF	4232		0000.000	1	2	2	2	1	1	1
82685	D	PROPARGITE D LE	PROPARDL	4042		0000.000	1	2	2	2	1	1	1
82685	E	PROPARGITE D FE	PROPARDF	4242		0000.000	1	2	2	2	1	1	1
82686	D	AZINPHOS-METHYL D LE	AZINPHDL	4004		0000.000	1	2	2	2	1	1	1
82686	E	AZINPHOS-METHYL D FE	AZINPHDF	4204		0000.000	1	2	2	2	1	1	1
82687	D	PERMETHRIN-CIS D LE	PERMETDL	4036		0000.000	1	2	2	2	1	1	1
82687	E	PERMETHRIN-CIS D FE	PERMETDF	4236		0000.000	1	2	2	2	1	1	1
82688	A	N 15/14-NO3 SOLID	N15/14OS	1719		0000.000	0	2	2	2	3	3	3
82689	A	N 15/14-NH4 SOLID	N15/14HS	1720		0000.000	0	2	2	2	3	3	3
82690	A	N 15/14-NO3 DIS	N15/14OW	1718		0000.000	0	2	2	2	3	3	3
82691	A	N 15/14-NH4 DIS	N15/14HW	1717		0000.000	0	2	2	2	3	3	3
85795	A	XYLENE M & P HL WWR	MPXYL HL	1711	EPA5242	0003.000	0	0	0	1	2	2	2
85795	B	XYLENE META&PARA WWR	MPXYLENE	1712	EPA5242	0000.200	0	0	1	2	2	2	2
85795	C	MTPXYLENE EPA524.2	MPXYLEPA	2251		0000.200	0	0	2	2	3	3	3
85795	Z	M & P-XYLENE	NAWQAVOC	5919		0000.000	3	3	3	3	3	3	3
85795	Y	M & P-XYLENE	NAWQAVOC	5973		0000.000	3	3	3	3	3	3	3
90095	A	SP. CONDUCTANCE LAB	COND LAB	0069	I278185	0001.000	0	0	0	1	2	3	3
90095	B	SP. CONDUCTANCE LIS	COND LL	1269	I178085	0000.500	0	0	1	2	3	3	3
90410	A	ALK TOT LAB. CACO3	TOT ALK	0070	I203085	0001.000	0	0	1	2	2	3	3
90410	B	ALK 2ND DVT AS CACO3	ALK LL	1270	I203486	0000.500	0	0	2	3	3	3	3
91063	D	DIAZINON D10 D LE	D10DIZDL	4014		0000.000	0	0	1	2	3	3	3
91063	E	DIAZINON D10 D FE	D10DIZDF	4214		0000.000	0	0	1	2	3	3	3
91064	D	TERBUTHYLAZIN D LE	TRBYLZDL	4048		0000.000	0	0	1	2	3	3	3
91064	E	TERBUTHYLAZIN D FE	TRBYLZDF	4247		0000.000	0	0	1	2	3	3	3

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
91065	D	HCH ALPHA D6 D LE	HCH D6DL	4024		0000.000	0	0	1	2	3	3	3
91065	E	HCH ALPHA D6 D FE	HCH D6DF	4224		0000.000	0	0	1	2	3	3	3
99446	A	SECTION 1 DOES THIS	SECTN-1	0100		0000.000	0	1	2	3	4	5	6
99447	A	DIGESTION PROC. EPA	EPA WAT	0124	I373685	0000.000	0	0	1	2	3	4	6
99447	B	EPA DIGESTION DW	EPADWDIG	2335		0000.000	0	0	0	0	0	0	0
99451	A	GAMMA-SCAN BOT.MATR.	G.SCAN B	0212		0000.000	0	0	1	2	3	3	3
99452	A	GAMMA-SCAN DISSOLVED	G.SCAN D	0443		0000.000	0	0	0	1	2	3	3
99454	A	CARBON-14 % ERR +/-	C-14 ERR	0640		0000.000	0	0	1	2	3	3	3
99463	A	SECTION 2 DOES THIS	SECTION2	0755		0000.000	0	1	2	3	4	5	6
99464	A	SECTION 3 DOES THIS	SECTION3	0756		0000.000	0	1	2	3	4	5	6
99465	A	SECTION 4 DOES THIS	SECTION4	0757		0000.000	0	1	2	3	4	5	6
99467	A	SECTION 6 DOES THIS	SECTION6	0759		0000.000	0	1	2	3	4	5	6
99468	A	SECTION 7 DOES THIS	SECTION7	0760		0000.000	0	1	2	3	4	5	6
99469	A	AAGF DOES THIS	AAGF	0733		0000.000	0	1	2	3	4	5	6
99470	A	LIS DOES THIS	LIS	0734		0000.000	0	1	2	3	4	5	6
99471	A	QC DOES THIS	QC	0735		0000.000	0	1	2	3	4	5	6
99475	A	BTM GCFID PROFILE	BTMGCFID	1236		0000.000	0	0	0	1	2	2	2
99476	A	H2O GC/MS ALL	GCMS ALL	1238	O311783	0000.000	0	0	0	1	2	2	2
99477	A	H2O GC/MS PP	GC/MS PP	1239	O311783	0000.000	0	0	0	1	2	2	2
99478	A	H2O GC/FID PP	GCFID PP	1240		0000.000	0	0	0	1	2	2	2
99479	A	BTM GC/MS ALL	BTMS ALL	1241	O511683	0000.000	0	0	0	1	2	2	2
99481	A	O-18/0-16GASEOUS CO2	C13/O-18	1243		0000.000	0	0	1	2	3	3	3
99800	A	SET # SCHEDULE 1301	SET#1301	1864		0000.000	1	2	2	2	2	2	7
99801	A	SET NUMBER SCH. 1304	SET#1304	1839		0000.000	1	2	2	2	2	2	7
99802	A	SET # SCHEDULE 1316	SET#1316	1866		0000.000	1	2	2	2	2	2	7
99803	A	SET # SCHEDULE 1317	SET#1317	1867		0000.000	1	2	2	2	2	2	7
99804	A	SET NUMBER SCH 1319	SET#1319	1837		0000.000	1	2	2	2	2	2	7
99805	A	SET # SCHEDULE 1321	SET#1321	1868		0000.000	1	2	2	2	2	2	7
99806	A	SET NUMBER SCH. 1324	SET#1324	1840		0000.000	1	2	2	2	2	2	7
99808	A	SET NUMBER SCH. 1359	SET#1359	1838		0000.000	1	2	2	2	2	2	7
99809	A	SET # SCHEDULE 1361	SET#1361	1870		0000.000	1	2	2	2	2	2	7
99810	A	SET # SCHEDULE 1364	SET#1364	1871		0000.000	1	2	2	2	2	2	7
99811	A	SET NUMBER SCH. 1379	SET#1379	1841		0000.000	1	2	2	2	2	2	7
99812	A	SET # SCHEDULE 1381	SET#1381	1872		0000.000	1	2	2	2	2	2	7
99813	A	SET # SCHEDULE 1383	SET#1383	1874		0000.000	1	2	2	2	2	2	7
99814	A	SET # SCHEDULE 1385	SET#1385	1873		0000.000	1	2	2	2	2	2	7
99815	A	SET # SCHEDULE 1389	SET#1389	1865		0000.000	1	2	2	2	2	2	7
99816	A	SET # SCHEDULE 1398	SET#1398	1869		0000.000	1	2	2	2	2	2	7
99817	A	SET NUMBER SCH. 1608	SET#1608	1843		0000.000	1	2	2	2	2	2	7
99818	A	SET # SCHEDULE 2001	SET#2001	4052		0000.000	1	2	2	2	2	2	7
99819	A	SET # SCHEDULE 2010	SET#2010	4252		0000.000	1	2	2	2	2	2	7
99820	A	SET # SCHEDULE 2050	SET#2050	5451		0000.000	1	2	2	2	2	2	7
99821	A	SET # SCHEDULE 2051	SET#2051	5651		0000.000	1	2	2	2	2	2	7
99822	A	SET # SCHEDULE 2101	SET#2101	7033		0000.000	1	2	2	2	2	2	7
99824	B	SET # SCHEDULE 2501	SET#2501	5053		0000.000	1	2	2	2	2	2	7
99825	B	SET # SCHEDULE 2502	SET#2502	5290		0000.000	1	2	2	2	2	2	7
99826	A	SET NUMBER SCH. 79	SET# 79	1836		0000.000	1	2	2	2	2	2	7
99827	A	SET # NAWQA VOA	SET# VOA	5861		0000.000	1	2	2	2	2	2	7

Appendix C: Parameter Method Codes

Parm Code	M C	20-Character Name	8-Char Name	Lab Code	TWRI Method	Minimum Report	A	B	C	D	E	F	G
99827	B	SET # SCHEDULE 2091	SET#2091	5862		0000.000	1	2	2	2	2	2	7
99831	A	SUR-TOLUIC-ACID-2050	TOLUIC_A	5453		0000.000	0	1	1	2	3	3	3
99831	B	SUR-TOLUIC-ACID-2051	TOLUIC_A	5653		0000.000	0	1	1	2	3	3	3
99832	A	D4-1-2-DICHLOROETHAN	12D4CA	1599		0000.000	0	0	1	2	2	3	3
99832	B	D4-12BCE %SURREPA	D4DCEEPA	2279		0000.010	0	1	2	3	4	5	6
99832	Z	12DICHLOROETHANE D4	NAWQAVOC	5950		0000.000	3	3	3	3	3	3	3
99833	A	D-8-TOLUENE	D8TOLENE	1600		0000.000	0	0	1	2	2	3	3
99833	B	D-8 TOULENE %SURREPA	D8TOLEPA	2260		0000.010	0	1	2	3	4	5	6
99833	Z	TOLUENE D8	NAWQAVOC	5951		0000.000	3	3	3	3	3	3	3
99834	A	1 4-BROMOFLUOROBENZE	BFB	1601		0000.000	0	0	1	2	2	3	3
99834	B	14BFB %SURREPA	BFBSUEPA	2261		0000.010	0	1	2	3	4	5	6
99834	Z	P-BROMOFLUOROBENZENE	NAWQAVOC	5952		0000.000	3	3	3	3	3	3	3
99835	A	SUR-BDMC-2050	BDMC2050	5452		0000.000	0	1	1	2	3	3	3
99835	B	SUR-BDMC-2051	BDMC2051	5652		0000.000	0	1	1	2	3	3	3
99847	A	SAMPLE VOLUME 2051	SV2051	5654		0000.000	0	0	0	0	2	3	4
99848	A	SAMPLE VOLUME 2050	SV2050	5454		0000.000	0	0	0	0	2	3	4
99849	A	ANALYTICALREFERENCE#	ANLTREF#	7037		0000.000	0	1	2	3	3	4	7
99850	B	ANALYTICAL REF 2501	ANLTREF#	5058		0000.000	0	1	2	3	3	4	7
99852	A	SAMPLE WEIGHT SC2101	SW 2101	7036		0000.000	0	1	2	3	3	4	7
99853	B	SAMPLEWEIGHT SCH2501	SW-S2501	5057		0000.000	0	1	2	3	3	4	7
99855	A	SAMPLE VOL 1383/1385	SV138385	1814	O311883	0001.000	0	0	0	2	3	3	3
99856	D	VOL.SAM-SCH 2001 DLE	SV2001LE	4051		0000.000	3	3	3	3	3	3	3
99857	E	VOL.SAM-SCH 2010 DFE	SV2010FE	4251		0000.000	3	3	3	3	3	3	3
99858	A	SAMPLEVOLUME SCH1385	SV-S1385	1815	O311883	0001.000	0	0	0	2	3	3	3
99859	A	SAMPLEVOLUME SCH 79	SV-S79	1803		0001.000	0	0	0	2	3	3	3
99860	A	SAMPLEVOLUME SCH1379	SV-S1379	1804		0001.000	0	0	0	2	3	3	3
99861	A	SAMPLEVOLUME SCH1389	SV-S1389	1805	O310683	0001.000	0	0	0	2	3	3	3
99863	A	SAMPLEVOLUME SCH1321	SV-S1321	1810	O110483	0001.000	0	0	0	2	3	3	3
99864	A	SAMPLEVOLUME SCH1398	SV-S1398	1807	O310483	0001.000	0	0	0	2	3	3	3
99865	A	SAMPLEVOLUME SCH1324	SV-S1324	1808	O310483	0001.000	0	0	0	2	3	3	3
99866	A	SAMPLEVOLUME SCH1608	SV-S1608	1809		0001.000	0	0	0	2	3	3	3
99867	A	SAMPLEVOLUME SCH1316	SV-S1316	1811	O110483	0001.000	0	0	0	2	3	3	3
99868	A	SAMPLEVOLUME SCH1319	SV-S1319	1812	O310483	0001.000	0	0	0	2	3	3	3
99869	A	SAMPLEVOLUME SCH1359	SV-S1359	1813	O310783	0001.000	0	0	0	2	3	3	3
99870	B	DIGESTION WATER IN B	INB	1735		0000.000	0	0	1	2	3	4	6
99895	D	SILVER CONTRACT EPA	AG-TCONT	1647	E272.2	0000.500	0	1	2	2	2	2	2
99896	B	CYANIDE-T CONT EPA	CN-T CON	1648	SA412.D	0000.010	1	2	2	2	2	2	2
99897	B	ANTIMONY-T EPA CONT	SB-T CNT	1646	E204.2	0010.000	0	0	0	1	2	2	2
99998	A	CENTRAL LAB-ID-#	LAB-ID-#	1500		0000.000	0	0	0	1	2	3	7

Appendix D. Examples of Output

The section numbers listed below correspond to the same section numbers in the QW User's Manual.

<u>Section</u>	<u>Description</u>	<u>Page No.</u>
2.3 Option 2.3.2 -- Log List (qwloglist) -- Example Output.....		D-2
2.3 Option 2.3.4 -- Sample List and/or Balance (qwbal) -- Example Output		D-4
2.3 Option 2.3.6 -- Water-Quality Table (qwtable) -- Example Output.....		D-7
2.3 Option 2.3.7 -- Edit Validation Program (qwvalid) -- Example Output		D-20
2.4 Option 2.4.1 -- List Site Records (qwsitesite) -- Example Output		D-24
2.4 Option 2.4.3 -- List Parm Code Dictionary (qwpcdlist) -- Example Output		D-25
2.4 Option 2.4.6 -- List State/County Data (qwckstcty)-- Example Output		D-26
2.4 Option 2.4.7 -- List Parm Code Dictionary (with precision codes) (qwpcddump) Example Output ..		D-27
3.1 Option 1 -- Retrieve NWQL Data (qwgetlab) -- Example Output		D-28
3.2 Option 2 -- Process Laboratory Accounting Records (qwlabsite)-- Example Output.....		D-29
4 Option 4.1 -- Enter NWQL Data (qw_cardsin) -- Example watlist Output		D-30
4 Option 4.2 -- Update Water-Quality File (qw_enter) -- Example watlist Output		D-34

2.3 Option 2.3.2 -- Log List (qwloglist) -- Example OutputNote: This information is now available at URL: <http://wwwnwql.cr.usgs.gov/USGS/customer/customer.html>.

DATA IN WATER-QUALITY FILE MON, FEB 08 1988																							
RECORD NUMBER	STATION NUMBER	BEGIN DATE	BEGIN TIME	END DATE	END TIME	ANALYSIS M CODES STAT.	LAST UPDATE	NO OF PARMS	TYPES OF ANALYSES					CH	NU	ME	BI	PE	RA	SE	BE	AGENCY	LAB-ID
									CH	NU	ME	BI	PE	RA	SE	BE	AGENCY	LAB-ID					
98600002	01094344	12-28-85	1103	-	-	9 AA999 FD+LB	870224	3									USGS						
C8600003	01094344	11-30-85	1003	-	-	9 AA999 FD+LB	870224	2									USGS						
98600005	01111230	11-30-85	1003	-	-	9 A999A FD+LB	870604	2									USGS						
98600006	01111230	12-28-85	1103	-	-	9 AA999 FD+LB	870224	3									USGS						
98600007	01111231	11-30-85	1003	-	-	9 A999A FD+LB	870604	2									USGS						
98600008	01111231	12-28-85	1103	-	-	9 AA999 FD+LB	870224	3									USGS						
98600010	01094340	03-13-86	0001	-	-	9 79A99 FD+LB 222222222	870622	7									USGS						
98600011	01094340	03-13-86	0003	-	-	9 79A99 FD+LB 111111111	870622	6									USGS						
98600012	01094340	03-13-86	0004	-	-	9 79A99 FD+LB 444444444	870622	6									USGS						
98600013	01111230	03-13-86	0000	-	-	9 79A99 FD+LB 111111111	870622	6									USGS						
98600014	01111230	03-13-86	0001	-	-	9 79A99 FD+LB 222222222	870622	6									USGS						
98600015	01111230	03-13-86	0003	-	-	9 79A99 FD+LB 111111111	870622	6									USGS						
98600016	01111230	03-13-86	0004	-	-	9 79A99 FD+LB 444444444	870622	6									USGS						
98600017	01094340	10-16-85	1530	-	-	9 AAA99 FD+LB	870818	6									USGS						
98600018	01094340	10-16-85	1535	-	-	9 AAA99 FD+LB	870818	4									USGS						
98600019	01094340	10-16-85	1540	-	-	9 AAA99 FD+LB	870818	6									USGS						
98600020	01094340	10-16-85	1545	-	-	9 AAA99 FD+LB	870818	4									USGS						
98600021	01094340	10-16-85	1550	-	-	9 AAA99 FD+LB	870818	6									USGS						
98600022	01094340	10-16-85	1555	-	-	9 AAA99 FD+LB	870818	6									USGS						
98600023	01094340	10-16-85	1600	-	-	9 AAA99 FD+LB	870818	4									USGS						
98600024	01094340	10-16-85	1605	-	-	9 AAA99 FD+LB	870818	6									USGS						
98600025	01094340	10-16-85	1630	-	-	9 79599 FD+LB	870818	71									USGS	5305703					
98600026	01094340	02-11-86	1500	-	-	9 7999B FD+LB	870818	64									USGS	6045113					
98600027	01094340	05-20-86	1345	-	-	9 79999 FD+LB	870818	65									USGS	6147123					
98600028	01094340	08-05-86	1300	-	-	9 79999 FD+LB	870818	21									USGS	6223003					
98600029	01097000	10-22-85	1430	-	-	9 79999 FD+LB	870818	63									USGS	5299009					
98600030	01097000	01-13-86	1115	-	-	9 AAA99 FD+LB	870818	17									USGS						
98600031	01097000	01-13-86	1445	-	-	9 7999B FD+LB	870818	49									USGS	7020008					
98600032	01097000	01-31-86	1115	-	-	0 79A99 FD+LB	870818	13									USGS	6034072					
98600033	01097000	01-31-86	1115	-	-	9 7999B FD+LB	870818	47									USGS	6034069					

DATA IN WATER-QUALITY FILE
MON, FEB 08 1988

RECORD NUMBER	STATION NUMBER	BEGIN DATE	BEGIN TIME	END DATE	END TIME	M	ANALYSIS CODES	STAT.	PROJECT	LAST UPDATE	NO OF PARMS	CH	NU	ME	BI	PE	RA	SE	BE	AGENCY	LAB-ID
98600034	01097000	04-24-86	1145	-	-	9	79999	FD+LB		870818	63									USGS	6118046
98600035	01097000	07-16-86	1330	-	-	9	79999	FD+LB		870818	27									USGS	6203067
98600036	01105730	10-23-85	1300	-	-	9	79999	FD+LB		870818	65									USGS	5299010
98600037	01105730	01-30-86	1230	-	-	9	7999B	FD+LB		870818	63									USGS	6034073
98600038	01105730	04-23-86	1100	-	-	9	79999	FD+LB		870818	61									USGS	6118047
98600039	01105730	07-17-86	1230	-	-	9	79999	FD+LB		870818	25									USGS	6203066
98600040	01094500	10-16-85	1355	-	-	9	79999	FD+LB		870818	66									USGS	5294001
98600041	01094500	01-07-86	1515	-	-	9	79999	FD+LB		870818	67									USGS	6010058
98600042	01094500	04-16-86	1215	-	-	9	79999	FD+LB		870818	67									USGS	6111069
98600043	01094500	07-15-86	1245	-	-	9	79999	FD+LB		870818	28									USGS	6202163
98600044	01094340	04-15-86	1010	-	-	9	HH499	FD+LB		870909	67									USGS	
98600045	01094340	06-17-86	1230	-	-	9	H3499	FD+LB		870909	190									USGS	
98600046	01111230	10-16-85	1140	85-10-17	1145	9	7GA99	APPRO		880114	59									USGS	

SURFACE WATER	43
GROUND WATER	0
TOTAL	43

PROJECT	COUNT
36	
222222222	2
111111111	3
444444444	2

2.3 Option 2.3.4 -- Sample List and/or Balance (qwbal) -- Example Output

WATER QUALITY ANALYSIS - MON, FEB 08 1988

RECORD NUMBER ----- 97900025
 STATION NUMBER ----- 01096550
 STATION NAME ----- MERRIMACK RIVER ABOVE LOWELL, MA
 DATE OF COLLECTION -- 03-09-1979 0800 - -

PARAMETERS INCLUDED IN THIS RECORD ARE--

NO.	CODE.	REMARK	VALUE.....	DESCRIPTION.....
1	00010		0.5	WATER TEMPERATURE, DEGREES
2	00020		6.5	TEMPERATURE, AIR, DEGREES
3	00028	80010		AGENCY ANALYZING SAMPLE (CODE N)
4	00061	40600		DISCHARGE INSTANTANEOUS STREAM CUBIC (FEET/SECOND)
5	00070	15		TURBIDITY (JACK)
6	00076	15		TURBIDITY (FTU)
7	00095	52		SPECIFIC CONDUCTANCE, US/CM @ 25 DEGREES CENTIGR
8	00300	14.2		OXYGEN DISSOLVED (MG/L)
9	00301	98		OXYGEN DISSOLVED (% OF SATURATION)
10	00340	16		CHEMICAL OXYGEN DEMAND, HIGH LEVEL, (MG/L)
11	00400	5.20		PH (STANDARD UNITS)
12	00410	1		ALKALINITY WATER WHOLE TOTAL, FIELD, (MG/L AS CACO ₃)
13	00500	96		SOLIDS, RESIDUE ON TOTAL EVAPORATION AT 105 DEGREES CELCI
14	00530	41		RESIDUE, TOTAL NON FILTERABLE (MG/L)
15	00556	0		OIL AND GREASE TOTAL RECOVERABLE, GRAVIMETRIC FREON EXTRACTABLE (MG/
16	00600	0.84		NITROGEN TOTAL (MG/L AS N)
17	00605	0.60		NITROGEN ORGANIC TOTAL (MG/L AS N)
18	00610	0.080		NITROGEN AMMONIA TOTAL (MG/L AS N)
19	00615	0.010		NITROGEN, NITRITE, TOTAL, MG/L AS N
20	00620	0.150		NITROGEN NITRATE TOTAL (MG/L AS N)
21	00623	0		NITROGEN AMMONIA PLUS ORGANIC DISSOLVED (MG/L AS N)
22	00624	0.64		NITROGEN AMMONIA PLUS ORGANIC SUSPENDED TOTAL (MG/L AS N)
23	00625	0.68		NITROGEN AMMONIA PLUS ORGANIC TOTAL (MG/L AS N)
24	00630	0.160		NITROGEN NITRITE PLUS NITRATE TOTAL (MG/L AS N)
25	00665	0.150		PHOSPHOROUS TOTAL (MG/L AS P)
26	00666	0.020		PHOSPHOROUS DISSOLVED (MG/L AS P)
27	00681	5.7		CARBON ORGANIC DISSOLVED (MG/L AS C)
28	00689	1.5		CARBON ORGANIC SUSPENDED TOTAL (MG/
29	00900	10		HARDNESS TOTAL (MG/L AS CA _{CO₃})
30	00902	9		NONCARBONATE HARDNESS WATER WHOLE TOTAL, FIELD, (MG/L AS CA CO ₃)
31	00915	2.9		CALCIUM DISSOLVED (MG/L AS CA)
32	00925	0.60		MAGNESIUM DISSOLVED (MG/L AS MG)
33	00930	5.4		SODIUM DISSOLVED (MG/L AS NA)
NO.	CODE.	REMARK	VALUE.....	DESCRIPTION.....

NO.	CODE.	REMARK	VALUE.....	DESCRIPTION.....
34	00931		0.8	SODIUM ABSORPTION RATIO
35	00932		52	SODIUM PERCENT
36	00935		0.80	POTASSIUM DISSOLVED (MG/L AS K)
37	00940		9.0	CHLORIDE DISSOLVED (MG/L AS CL)
38	00945		7.0	SULFATE DISSOLVED (MG/L AS SO4)
39	00950		0.10	FLUORIDE DISSOLVED (MG/L AS F)
40	00955		4.7	SILICA DISSOLVED (MG/L AS SIO2)
41	01000		1	ARSENIC DISSOLVED (UG/L AS AS)
42	01002		1	ARSENIC TOTAL (UG/L AS AS)
43	01005		200	BARIUM DISSOLVED (UG/L AS BA)
44	01006		0	BARIUM SUSPENDED RECOVERABLE (UG/L AS BA)
45	01007		200	BARIUM TOTAL (UG/L AS BA)
46	01025		7	CADMIUM DISSOLVED (UG/L AS CD)
47	01026		1	CADMIUM SUSPENDED (UG/L AS CD)
48	01027		8	CADMIUM TOTAL (UG/L AS CD)
49	01030	1	2	CHROMIUM DISSOLVED (UG/L AS CR)
50	01031		29	CHROMIUM SUSPENDED (UG/L AS CR)
51	01034		30	CHROMIUM TOTAL (UG/L AS CR)
52	01035	1	2	COBALT DISSOLVED (UG/L AS CO)
53	01036		0	COBALT SUSPENDED (UG/L AS CO)
54	01037	1	2	COBALT TOTAL (UG/L AS CO)
55	01040	1	2	COPPER DISSOLVED (UG/L AS CU)
56	01041		6	COPPER SUSPENDED (UG/L AS CU)
57	01042		7	COPPER TOTAL (UG/L AS CU)
58	01044		1800	IRON SUSPENDED (UG/L AS FE)
59	01045		1900	IRON TOTAL (UG/L AS FE)
60	01046		140	IRON DISSOLVED (UG/L AS FE)
61	01049		36	LEAD DISSOLVED (UG/L AS PB)
62	01050		9	LEAD SUSPENDED (UG/L AS PB)
63	01051		45	LEAD TOTAL (UG/L AS PB)
64	01054		60	MANGANESE SUSPENDED (UG/L AS MN)
65	01055		170	MANGANESE TOTAL (UG/L AS MN)
66	01056		109	MANGANESE DISSOLVED (UG/L AS MN)
67	01075	U	0	SILVER DISSOLVED (UG/L AS AG)
68	01076		0	SILVER SUSPENDED (UG/L AS AG)
69	01077	U	0	SILVER TOTAL (UG/L AS AG)
70	01090	1	20	ZINC DISSOLVED (UG/L AS ZN)
71	01091		10	ZINC SUSPENDED (UG/L AS ZN)
72	01092	2	20	ZINC TOTAL (UG/L AS ZN)
73	01145	1	1	SELENIUM DISSOLVED (UG/L AS SE)
74	01146		0	SELENIUM SUSPENDED (UG/L AS SE)
75	01147	1	1	SELENIUM TOTAL (UG/L AS SE)
76	31501		8800	COLIFORM, MEMBRANE FILTER, IMMEDIATE M-ENDO MEDIUM (COLONIES/100 ML)
77	31616		630	COLIFORM, FECAL, MEMBRANE FILTER M-FC MEDIA AT 44.5 DEG. C (COLONIES/100 ML)

Appendix D: Sample Output

78	31673	450	STREPTOCOCCI, FECAL, MEMBRANE FILTER, KF AGAR (COLONIES/100 ML)
79	60050	1600	PHYTOPLANKTON, TOTAL (CELLS/ML)
80	70300	40	SOLIDS, RESIDUE ON EVAPORATION AT 180 DEG C, DISSOLVED (MG/L)
81	70301	32	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
82	70302	4390	SOLIDS, DISSOLVED (TONS PER DAY)
83	70303	0.05	SOLIDS, DISSOLVED (TONS PER ACRE-FOOT)
84	70331	63	SEDIMENT, SUSPENDED, SIEVE DIAMETER, PERCENT FINER THAN .062 MM
85	70953	5.83	CHLOROPHYLL-A, PHYTOPLANKTON, CHROMOTOGRAPHIC- FLUOROMETRIC (UG/L)
86	70954	0.000	CHLOROPHYLL-B, PHYTOPLANKTON, CHROMOTOGRAPHIC- FLUOROMETRIC (UG/L)
87	71887	3.7	NITROGEN, TOTAL (MG/L AS NO ₃)
88	71890	1 0.5	MERCURY, DISSOLVED (UG/L AS HG)
89	71895	0	MERCURY, SUSPENDED HG)RECOVERABLE (UG/L AS HG)
90	71900	1 0.50	MERCURY, TOTAL RECOVERABLE (UG/L AS HG)
91	80154	85	SEDIMENT, SUSPENDED CONCENTRATION (MG/L)
92	80155	1 9320	SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY)

RECORD NUMBER ----- 97900025
 STATION NUMBER ----- 01096550
 STATION NAME ----- MERRIMACK RIVER ABOVE LOWELL, MA
 DATE OF COLLECTION -- 03-09-1979 0800 - -

CATIONS	(MG/L)	(MEQ/L)	ANIONS	(MG/L)	(MEQ/L)
CALCIUM, DISS. MG/L	2.900	0.145	CHLORIDE, DISS. MG/L	9.000	0.254
MAGNESIUM, DISS. MG/L	0.600	0.050	SULFATE, DISS. MG/L	7.000	0.146
SODIUM, DISS. MG/L	5.400	0.235	FLUORIDE, DISS. MG/L	0.100	0.006
POTASSIUM, DISS. MG/L	0.800	0.021	ALKALINITY, FET, FLD	1.000	0.020
IRON, DISS. UG/L	140.000	0.008			
MANGANESE, DISS. UG/L	110.000	0.005			
TOTAL	0.461		TOTAL	0.425	
PERCENT DIFFERENCE = 4.08					

2.3 Option 2.3.6 -- Water-Quality Table (qwtable) -- Example Output

Single-Station format (Table type 1), No folding (All table types)

DISTRICT CODE 32

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 10-23-89
10312274 - TJ DRAIN at WILDLIFE ENTRANCE nr STILLWATER, NV

WATER QUALITY DATA, WATER YEAR OCTOBER 1988 TO SEPTEMBER 1989

DATE	TIME	TEMPER-		BARO-		DIS-		SPE-		PH		
		ATURE (DEG C) (00010)	ATURE (DEG C) (00020)	METRIC PRES- SURE	AGENCY COL- LECTING	AGENCY ANA- LYZING	CHARGE, INST. CUBIC	GAGE	DUCT-	OXYGEN,	PH	LAB
		WATER AIR (HG)	AIR OF (00025)	SAMPLE (CODE NUMBER)	SAMPLE (CODE NUMBER)	FEET SECOND (00027)	PER (00028)	HEIGHT (FEET) (00061)	ANCE (US/CM) (00095)	SOLVED (MG/L) (00300)	ARD UNITS (00400)	ARD UNITS (00403)
OCT												
14...	0815	8.0	--	663	1028	1028	--	--	31700	6.3	8.40	--
NOV												
15...	1100	4.0	--	662	1028	1028	--	--	30600	10.6	8.47	--
DEC												
13...	1030	0.5	5.5	665	1028	80020	E0.10	15.66	32900	10.4	8.35	8.00
13...	1100	0.5	--	665	1028	1028	--	--	32900	10.4	8.35	--
JAN												
12...	1100	--	--	--	1028	80020	--	--	--	--	--	--
12...	1100	0.0	--	674	1028	80020	--	--	33500	12.9	--	--
FEB												
15...	1200	0.0	--	--	1028	80020	0.0	--	--	--	--	--
MAR												
14...	1215	14.5	10.5	663	1028	80020	<0.10	--	32000	11.5	8.44	8.10
APR												
28...	1130	20.5	--	661	1028	1028	0.70	15.60	8610	11.3	8.53	--
MAY												
15...	1400	27.0	--	--	1028	80020	>3.0	15.58	11200	--	--	--
19...	1500	0.0	20.0	--	1028	80020	>1.0	15.54	15500	--	--	--
JUN												
12...	1100	23.5	27.0	663	1028	80020	0.60	15.62	11400	15.4	8.81	8.30

Single-Station format (Table type 1), Horizontally folded, 24-100 parameters per page (Type 1 tables only)

DISTRICT CODE 32

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
10351700 - TRUCKEE R NR NIXON, NV

PROCESS DATE 10-23-89

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	BARO-			DIS-			SPE-			
		METRIC	AGENCY	AGENCY	CHARGE,				CIFIC		
		PRES-	COL-	ANA-	INST.						
		TEMPER-	TEMPER-	SURE	LECTING	LYZING	CUBIC		TUR-	CON-	OXYGEN ,
		ATURE	ATURE	(MM	SAMPLE	SAMPLE	FEET	GAGE	BID-	DUCT-	DIS-
		(DEG C)	(DEG C)	(HG)	(CODE	(CODE	PER	HEIGHT	ITY	ANCE	SOLVED
(00010)	(00020)	(00025)	(00027)	(00028)	(00061)	(00065)	(00076)	(00095)	(00300)		

NOV											
13...	1120	10.0	14.0	655	1028	80020	46	2.64	0.60	736	9.8
MAR											
10...	1135	5.0	4.0	665	1028	80020	38	2.56	1.2	879	12.8
MAY											
25...	1135	19.5	26.0	660	1028	80020	32	2.56	1.6	764	9.2
AUG											
22...	1345	22.5	32.5	665	1028	80020	34	2.53	2.2	869	10.6

		ALKA-	CAR-	BICAR-	NITRO-		NITRO-	NITRO-	NITRO-	
		LINITY	BONATE	BONATE	GEN,	NITRO-	GEN,	GEN, AM-	GEN,	
	PH	WAT WH	WATER	WATER	AMMONIA	GEN,	NITRITE	MONIA +	NO2+NO3	PHOS-
(STAND-	(STAND-	TOT IT	WH IT	WH IT	DIS-	AMMONIA	DIS-	ORGANIC	DIS-	PHOROUS
DATE	ARD	ARD	MG/L AS	MG/L AS	SOLVED	TOTAL	SOLVED	TOTAL	SOLVED	TOTAL
UNITS)	UNITS)	CACO3	CO3	HCO3	(MG/L	(MG/L	(MG/L	(MG/L	(MG/L	(MG/L
(00400)	(00403)	(00419)	(00447)	(00450)	(00608)	(00610)	(00613)	(00625)	(00631)	(00665)

NOV											
13...	8.70	8.50	118	5	133	<0.010	0.010	<0.010	0.50	<0.100	0.010
MAR											
10...	8.40	8.10	126	--	--	0.010	<0.010	<0.010	0.30	<0.100	0.020
MAY											
25...	8.80	8.50	111	8	119	0.010	<0.010	<0.010	0.30	<0.100	0.030
AUG											
22...	8.60	8.60	124	4	142	<0.010	<0.010	<0.010	0.60	<0.100	0.030

DATE	PHOS-	PHOROUS	CALCIUM	MAGNE-	SODIUM,	POTAS-	CHLO-	SULFATE	FLUO-	SILICA,
	PHOROUS	ORTHO,	SIMUM,	SODIUM,	SIMUM,	RIDE,	SULFATE	RIDE,	DIS-	
	DIS-	SOLVED								
	SOLVED	(MG/L								
	(MG/L	AS								
	AS P)	AS P)	AS CA)	AS MG)	AS NA)	AS K)	AS CL)	AS SO4)	AS F)	SIO2)
	(00666)	(00671)	(00915)	(00925)	(00930)	(00935)	(00940)	(00945)	(00950)	(00955)
NOV										
13...	0.010	<0.010	45	18	75	6.6	100	100	0.10	14
MAR										
10...	0.010	0.010	52	22	88	7.6	110	110	0.20	16
MAY										
25...	0.030	<0.010	41	18	79	7.2	120	92	0.30	16
AUG										
22...	0.020	<0.010	46	22	93	9.1	130	110	0.20	18
NOV										
13...	6	65	<0.5	<1	<1	<3	1	11	8	42
MAR										
10...	6	69	<0.5	<1	<1	<3	2	22	<5	95
MAY										
25...	12	51	<0.5	<1	<1	<3	2	29	7	50
AUG										
22...	10	69	<0.5	<1	<1	<3	3	15	<5	25

Single-Station format (Table type 1), Horizontally folded, 11-100 parameters per page (Type 1 and 3 tables only)

DISTRICT CODE 32

 UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
 10351700 - TRUCKEE R NR NIXON, NV

PROCESS DATE 10-23-89

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DATE	TIME	BARO-		DIS-		SPE-		OXYGEN, DIS- SOLVED			
		METRIC PRES-	AGENCY COL-	AGENCY ANA-	CHARGE, INST.	TUR-	CON-				
TEMPER- ATURE WATER (DEG C) (00010)	TEMPER- ATURE AIR (DEG C) (00020)	SURE (MM OF HG)	LECTING SAMPLE (CODE NUMBER)	LYZING SAMPLE (CODE NUMBER)	CUBIC FEET PER SECOND	GAGE HEIGHT (FEET)	BID- ITY (NTU)	DUCT- ANCE (US/CM)	OXYGEN, DIS- SOLVED (MG/L) (00300)		
NOV 13...	1120	10.0	14.0	655	1028	80020	46	2.64	0.60	736	9.8
MAR 10...	1135	5.0	4.0	665	1028	80020	38	2.56	1.2	879	12.8
MAY 25...	1135	19.5	26.0	660	1028	80020	32	2.56	1.6	764	9.2
AUG 22...	1345	22.5	32.5	665	1028	80020	34	2.53	2.2	869	10.6
<hr/>											
DATE	PH (STAND- ARD UNITS) (00400)	ALKALINITY PH LAB (STAND- ARD UNITS) (00403)	CAR-BONATE WAT WH TOT IT FIELD	BICAR-BONATE WATER WH IT FIELD	NITRO-GEN, AMMONIA DIS-SOLVED	NITRO-GEN, AMMONIA DIS-TOTAL	NITRO-GEN + NITRITE ORGANIC DIS-SOLVED	NITRO-GEN, AM- MONIA TOTAL SOLVED	NITRO-GEN, NO2+NO3 DIS-SOLVED TOTAL	PHOS- PHOROUS TOTAL (MG/L AS P) (00665)	
NOV 13...	8.70	8.50	118	5	133 <0.010	0.010 <0.010	0.50 <0.100	0.010	<0.100	0.010	
MAR 10...	8.40	8.10	126	--	-- 0.010	<0.010 <0.010	0.30 <0.100	0.010	<0.100	0.020	
MAY 25...	8.80	8.50	111	8	119 0.010	<0.010 <0.010	0.30 <0.100	0.010	<0.100	0.030	
AUG 22...	8.60	8.60	124	4	142 <0.010	<0.010 <0.010	0.60 <0.100	0.010	<0.100	0.030	

DATE	PHOS-	PHOROUS	CALCIUM	MAGNE-	SODIUM,	POTAS-	CHLO-	SULFATE	FLUO-	SILICA,
	PHOROUS	ORTHO,	SIMUM,	SODIUM,	SIMUM,	RIDE,	SULFATE	RIDE,	DIS-	
	DIS-	SOLVED								
	SOLVED	(MG/L								
	(MG/L	AS								
	AS P)	AS P)	AS CA)	AS MG)	AS NA)	AS K)	AS CL)	AS SO4)	AS F)	SIO2)
	(00666)	(00671)	(00915)	(00925)	(00930)	(00935)	(00940)	(00945)	(00950)	(00955)
NOV										
13...	0.010	<0.010	45	18	75	6.6	100	100	0.10	14
MAR										
10...	0.010	0.010	52	22	88	7.6	110	110	0.20	16
MAY										
25...	0.030	<0.010	41	18	79	7.2	120	92	0.30	16
AUG										
22...	0.020	<0.010	46	22	93	9.1	130	110	0.20	18
NOV										
13...	6	65	<0.5	<1	<1	<3	1	11	8	42
MAR										
10...	6	69	<0.5	<1	<1	<3	2	22	<5	95
MAY										
25...	12	51	<0.5	<1	<1	<3	2	29	7	50
AUG										
22...	10	69	<0.5	<1	<1	<3	3	15	<5	25

Single-station format (Table type 1), Vertically folded, maximum of 5 parameters (including date) (Type 1 and 2 Tables)

DISTRICT CODE 32

 UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
 10351700 - TRUCKEE R NR NIXON, NV

PROCESS DATE 10-23-89

WATER QUALITY DATA, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988

DIS- CHARGE, INST. CUBIC FEET DATE				SPE- CIFIC CON- DUCT- PER SECOND (00061)				OXYGEN, SOLVED (US/CM) (00095)				DIS- CHARGE, INST. CUBIC FEET DATE				SPE- CIFIC CON- DUCT- PER SECOND (00061)				OXYGEN, SOLVED (US/CM) (00300)			
NOV 13...	1120	46	736	9.8													MAY 25...	1135	32	764	9.2		
MAR 10...	1135	38	879	12.8													AUG 22...	1345	34	869	10.6		

Miscellaneous-station format (Table type 2), No folding (all table types)

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
MISCELLANEOUS STATION ANALYSES

DATE	TIME	BARO-			DIS-			SPE-	PH			
		METRIC	AGENCY	AGENCY	CHARGE,	INST.	CIFIC					
		PRES-	COL-	ANA-	LYZING	CUBIC	CON-			OXYGEN,	PH	LAB
		TEMPER-	TEMPER-	SURE	LECTING	SAMPLE	FEET			GAGE	DUCT-	DIS-
ATURE	ATURE	(MM	SAMPLE	SAMPLE	PER	HEIGHT	ANCE	SOLVED	ARD	ARD		
WATER	AIR	OF	(CODE	(CODE	SECOND	(FEET)	(US/CM)	(MG/L)	UNITS)	UNITS)		
(DEG C)	(DEG C)	(HG)	NUMBER)	NUMBER)	(00027)	(00061)	(00065)	(00095)	(00300)	(00400)		
(00010)	(00020)	(00025)	(00027)	(00028)	(00061)	(00065)	(00095)	(00300)	(00400)	(00403)		

10336730 90 N14 E18 10DAC 1 GLENBROOK C GLENBROOK NV (LAT 39 05 15N LONG 119 56 20W)

OCT 1988

12...	1502	9.0	-	--	1028	80020	0.20	1.29	539	--	--	--
25...	1050	6.5	8.	611	1028	80020	0.28	1.27	550	9.2	8.00	--

NOV

13...	1050	5.0	6.	--	1028	80020	0.54	1.32	622	--	--	--
13...	1400	4.5	4.	--	1028	80020	0.62	1.35	662	--	--	--

JAN 1989

06...	0947	0.5	-6.	--	1028	80670	0.61	1.36	510	--	--	--
20...	1035	1.0	-0.	612	1028	80670	0.46	1.35	495	11.5	8.05	--

FEB

22...	1040	2.0	8.	610	1028	80670	1.0	1.42	490	11.4	7.93	--
22...	1705	--	-	--	1028	80670	1.5	1.49	--	--	--	--
22...	2025	--	-	--	1028	80670	1.4	1.48	--	--	--	--

APR

06...	1020	4.5	10.	--	1028	1028	2.3	1.51	452	--	--	--
06...	1915	8.5	12.	--	1028	1028	2.6	1.53	435	--	--	--

AUG

07...	1330	14.0	17.	--	1028	1028	0.48	1.32	545	--	--	--
08...	1300	12.5	15.	--	1028	1028	1.3	1.42	548	--	--	--
30...	1350	11.5	24.	606	1028	1028	0.14	1.17	550	7.8	8.20	--

Appendix D: Sample Output

10336765 EDGEWOOD CREEK AT LAKE TAHOE NR STATELINE, NV (LAT 38 58 05N LONG 119 56 54W)

DEC 1988

20... 1020 2.0 3. 603 1028 1028 2.3 -- 92 10.2 7.60 --

JAN 1989

06... 1115 1.0 -1. -- 1028 1028 3.3 -- 118 -- -- --

20... 1015 3.0 4. 612 1028 1028 2.9 -- 120 10.1 7.70 --

FEB

10... 1245 1.5 8. -- 1028 1028 3.2 4.43 239 -- -- --

22... 1220 3.0 5. 610 1028 80020 5.8 4.46 186 8.8 7.30 --

APR

06... 1230 15.0 14. -- 1028 1028 3.2 4.88 121 -- -- --

06... 1315 13.0 17. -- 1028 1028 4.5 4.47 139 -- -- --

06... 1740 12.0 15. -- 1028 1028 4.3 4.45 147 -- -- --

13... 1105 10.5 10. -- 1028 1028 5.0 4.68 119 -- -- --

13... 1400 13.0 13. -- 1028 1028 4.1 4.64 122 -- -- --

13... 1650 13.5 17. -- 1028 1028 2.2 4.43 135 -- -- --

14... 0710 9.0 3. -- 1028 1028 3.6 4.59 122 -- -- --

20... 0740 13.0 8. 605 1028 1028 4.3 4.58 119 8.1 8.70 --

20... 1500 15.5 17. -- 1028 1028 3.2 4.52 116 -- -- --

20... 1920 13.5 12. -- 1028 1028 2.1 4.44 127 -- -- --

21... 0515 10.0 9. -- 1028 1028 3.9 4.56 120 -- -- --

Multiple-station format (Table type 3, first page), No folding (All table types)

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 10-23-89
MULTIPLE STATION ANALYSES

STATION	NUMBER	DATE	TIME			LECTING	LYZING	CUBIC	DIS-		OXYGEN, (MG/L)	PH (STAND- ARD UNITS)		
				SAM- PLING	TEMPER- ATURE				AGENCY COL- DEPTH (FEET)	AGENCY ANA- WATER (DEG C)			CHARGE , INST. FEET (CODE NUMBER)	SPE- CIFIC DUCT- ANCE (US/CM)
				(00003)	(00010)				(00027)	(00028)			(00061)	(00095)
393923119170601	02-19-70	--	--	--	1028	1028	--	--	--	--	--			
393949119084601	11-18-87	0800	--	14.0	1028	80020	--	24300	0.7	7.50				
394144119144901	02-20-70	--	--	--	1028	1028	--	--	--	--				
394426118594401	02-16-81	0952	134	20.0	--	80020	0.0	12000	--	8.25				
394556119023001	03-16-81	1017	59.4	15.5	--	80020	0.0	5600	--	8.33				
394621119011301	03-17-81	1113	88.0	110.5	--	80020	0.0	3800	--	7.92				
394627119012301	03-10-81	0925	114	36.0	--	80020	0.0	3600	--	9.20				
394640119134701	02-18-70	--	--	19.5	1028	1028	--	--	--	--				
394656119011301	03-12-81	0935	141	80.0	--	80020	0.0	3700	--	7.71				
394708119012001	03-11-81	0950	70.8	94.5	--	80020	0.0	3600	--	8.20				
394718119012401	02-20-81	1018	147	58.0	--	80020	0.0	4000	--	8.01				
394720119004901	06-02-60	--	--	--	1028	1028	--	--	--	--				
394722119001501	09-08-60	--	--	--	--	--	--	6240	--	7.30				
394726119001601	07-06-79	--	--	24.0	--	--	--	--	--	6.78				
394733119020701	03-14-81	1030	69.8	20.5	--	80020	0.0	3600	--	9.79				
394738119004801	04-02-81	1037	58.8	116.5	--	80020	0.0	3600	--	8.51				
394741119173101	02-18-70	--	--	19.5	1028	1028	--	--	--	--				
394820119001101	09-08-60	--	--	--	--	--	--	7290	--	4.70				
394833119011901	03-19-81	0947	100	26.5	--	80020	0.0	3400	--	10.20				
394905119040001	11-13-69	--	--	13.0	1028	1028	--	--	--	--				

Multiple-station format -- Continued (Second page)
 UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 10-23-89
 MULTIPLE STATION ANALYSES

	ALKA-	BICAR-	NITRO-	NITRO-	NITRO-	NITRO-	NITRO-	PHOS-	CARBON,	HARD-	
	LINITY	BONATE	GEN,	GEN,	GEN, AM-	GEN, NO2+NO3	PHOROUS	ORGANIC			
	PH	WAT WH	WATER	AMMONIA	NITRITE	MONIA +	ORTHO,	ORGANIC			
	LAB	TOT FET	WH FET	DIS-	DIS-	DIS-	DIS-	DIS-			
(STAND-	FIELD	FIELD	SOLVED	SOLVED	SOLVED	DIS.	SOLVED	SOLVED			
DATE	ARD	MG/L AS	MG/L AS	(MG/L	(MG/L	(MG/L	(MG/L	(MG/L	(MG/L		
UNITS)	CACO3	HCO3	AS N)	AS N)	AS N)	AS N)	AS N)	AS P)	AS C)	CACO3)	
	(00403)	(00410)	(00440)	(00608)	(00613)	(00618)	(00623)	(00631)	(00671)	(00681)	
	(00900)										
02-19-70	7.40	--	--	--	--	--	--	--	--	160	
11-18-87	7.30	186	230	0.420	<0.010	--	0.60	<0.100	0.140	2.2	1400
02-20-70	7.90	--	--	--	--	--	--	--	--	--	360
02-16-81	7.70	--	--	--	--	--	--	--	--	--	370
03-16-81	7.60	--	--	--	--	--	--	--	--	--	170
03-17-81	7.10	--	--	--	--	--	--	--	--	--	120
03-10-81	7.40	--	--	--	--	--	--	--	--	--	110
02-18-70	8.10	--	--	--	--	--	--	--	--	--	130
03-12-81	7.50	--	--	--	--	--	--	--	--	--	130
03-11-81	7.50	--	--	--	--	--	--	--	--	--	130
02-20-81	7.60	--	--	--	--	--	--	--	--	--	150
06-02-60	7.30	--	--	0.00	0.00	0.090	--	--	--	--	140
09-08-60	--	--	--	--	--	0.00	--	--	--	--	300
07-06-79	--	--	--	0.430	--	--	--	--	--	--	120
03-14-81	8.70	--	--	--	--	--	--	--	--	--	94
04-02-81	7.10	--	--	--	--	--	--	--	--	--	52
02-18-70	8.60	--	--	--	--	--	--	--	--	--	32
09-08-60	--	--	--	--	--	0.070	--	--	--	--	1100
03-19-81	8.90	--	--	--	--	--	--	--	--	--	65
11-13-69	8.00	--	--	--	--	--	--	--	--	--	58

Multiple-station format (Table type 3), Horizontally folded 11-100 parameters per page (Type 1 and 3 tables only)

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY PROCESS DATE 10-23-89
 MULTIPLE STATION ANALYSES

STATION	NUMBER	DATE	TIME			AGENCY COL- PLING	AGENCY ANA- TURE	CHARGE, INST. LYZING	SPE- CIFIC CUBIC	DIS-		
				SAM-	LECTING					CON-	OXYGEN,	PH
				DEPTH (FEET)	WATER (DEG C)					CODE (NUMBER)	FEET (CODE NUMBER)	DUCT- PER ANCE (US/CM)
				(00003)	(00010)	(00027)	(00028)	(00061)	(00095)	(00300)	(00400)	
393923119170601	02-19-70	--	--	--	1028	1028	--	--	--	--	--	
393949119084601	11-18-87	0800	--	14.0	1028	80020	--	24300	0.7	7.50		
394144119144901	02-20-70	--	--	--	1028	1028	--	--	--	--		
394426118594401	02-16-81	0952	134	20.0	--	80020	0.0	12000	--	8.25		
394556119023001	03-16-81	1017	59.4	15.5	--	80020	0.0	5600	--	8.33		
394621119011301	03-17-81	1113	88.0	110.5	--	80020	0.0	3800	--	7.92		
394627119012301	03-10-81	0925	114	36.0	--	80020	0.0	3600	--	9.20		
394640119134701	02-18-70	--	--	19.5	1028	1028	--	--	--	--		
394656119011301	03-12-81	0935	141	80.0	--	80020	0.0	3700	--	7.71		
394708119012001	03-11-81	0950	70.8	94.5	--	80020	0.0	3600	--	8.20		
394718119012401	02-20-81	1018	147	58.0	--	80020	0.0	4000	--	8.01		
394720119004901	06-02-60	--	--	--	1028	1028	--	--	--	--		
394722119001501	09-08-60	--	--	--	--	--	--	6240	--	7.30		
394726119001601	07-06-79	--	--	24.0	--	--	--	--	--	6.78		
394733119020701	03-14-81	1030	69.8	20.5	--	80020	0.0	3600	--	9.79		
394738119004801	04-02-81	1037	58.8	116.5	--	80020	0.0	3600	--	8.51		
394741119173101	02-18-70	--	--	19.5	1028	1028	--	--	--	--		
394820119001101	09-08-60	--	--	--	--	--	--	7290	--	4.70		
394833119011901	03-19-81	0947	100	26.5	--	80020	0.0	3400	--	10.20		
394905119040001	11-13-69	--	--	13.0	1028	1028	--	--	--	--		

Appendix D: Sample Output

	ALKA-LINITY	BICAR-BONATE	NITRO-GEN, AMMONIA	NITRO-GEN, NITRITE	NITRO-GEN, NITRATE	NITRO-GEN, MONIA +	NITRO-GEN, NO2+NO3	PHOS-PHOROUS	CARBON, ORTHO,	HARDNESS	
DATE	PH LAB (STAND-ARD UNITS)	WAT TOT FIELD MG/L AS CACO3	WH FET WH FET MG/L AS HCO3	DIS- SOLVED MG/L AS N	DIS- SOLVED MG/L AS N	DIS- SOLVED MG/L AS N	DIS. SOLVED MG/L AS N	DIS- SOLVED MG/L AS P	(MG/L AS C)	(MG/L AS CACO3)	
	(00403)	(00410)	(00440)	(00608)	(00613)	(00618)	(00623)	(00631)	(00671)	(00681)	
02-19-70	7.40	--	--	--	--	--	--	--	--	160	
11-18-87	7.30	186	230	0.420	<0.010	--	0.60	<0.100	0.140	2.2	1400
02-20-70	7.90	--	--	--	--	--	--	--	--	--	360
02-16-81	7.70	--	--	--	--	--	--	--	--	--	370
03-16-81	7.60	--	--	--	--	--	--	--	--	--	170
03-17-81	7.10	--	--	--	--	--	--	--	--	--	120
03-10-81	7.40	--	--	--	--	--	--	--	--	--	110
02-18-70	8.10	--	--	--	--	--	--	--	--	--	130
03-12-81	7.50	--	--	--	--	--	--	--	--	--	130
03-11-81	7.50	--	--	--	--	--	--	--	--	--	130
02-20-81	7.60	--	--	--	--	--	--	--	--	--	150
06-02-60	7.30	--	--	0.00	0.00	0.090	--	--	--	--	140
09-08-60	--	--	--	--	--	0.00	--	--	--	--	300
07-06-79	--	--	--	0.430	--	--	--	--	--	--	120
03-14-81	8.70	--	--	--	--	--	--	--	--	--	94
04-02-81	7.10	--	--	--	--	--	--	--	--	--	52
02-18-70	8.60	--	--	--	--	--	--	--	--	--	32
09-08-60	--	--	--	--	--	0.070	--	--	--	--	1100
03-19-81	8.90	--	--	--	--	--	--	--	--	--	65
11-13-69	8.00	--	--	--	--	--	--	--	--	--	58

Biological Table (Table Type 4)

DISTRICT CODE 32

UNITED STATES DEPARTMENT OF INTERIOR - GEOLOGICAL SURVEY
10351700 - TRUCKEE R NR NIXON, NV

PROCESS DATE 10-24-89

PHYTOPLANKTON ANALYSES, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977

DATE	OCT 21, 76	SET:	1
TIME	1200	PAGE:	1

TOTAL CELLS/ML	700
----------------	-----

CELLS PER-	
/ML	CENT

CHRYSTOPHYTA (YELLOW-GREEN ALGAE)

.BACILLARIOPHYCEAE	
..PENNALES	
...ACHNANTHACEAE	
...COCCONEIS	25 4
...CYMBELLACEAE	
...CYMBELLA	17 2
...DIATOMACEAE	
...DIATOMA	29 4
...FRAGILARIACEAE	
...FRAGILARIA	25 4
...SYNEDRA	12 2
...GOMPHONEMATACEAE	
...GOMPHONEMA	4 <1
...NAVICULACEAE	
...NAVICULA	87 12

2.3 Option 2.3.7 -- Edit Validation Program (qwvalid) -- Example Output

QW RECORD VALIDATION PROGRAM

MON, FEB 08 1988

RECORD NUMBER: 97900025 STATION NUMBER: 01096550 COLLECTED: 03-09-1979 AT: 0800 - - AT:
 STATION NAME: MERRIMACK RIVER ABOVE LOWELL, MA COUNTY: 017 LAB-ID:
 MEDIUM: 0 STATUS: 7 SOURCE: 9 HYD. CONDITION: A SAMPLE TYPE: 9 HYD. EVENT: 9 92 PARAMETERS

CATION/CONDUCTANCE RATIO OUTSIDE LIMITS .92 TO 1.24

DISSOLVED SOLIDS/CALCULATED SOLIDS RATIO OUTSIDE LIMITS .9 TO 1.12

70302 STORED VALUE (4390) DOES NOT AGREE WITH COMPUTED VALUE (4380)

CODE	PARAMETER NAME	UNITS	VALUE	R Q M P
00010	WATER TEMPERATURE	(DEGREES)	0.5	3 A 1
00020	AIR TEMPERATURE	DEGREES	6.5	3 A 2
00028	ANALYZING AGENCY	(CODE NUMBER)	80010	3 A 5
00061	DISCHARGE INS. (F/S)	(FEET/SECOND)	40600	3 A 2
00070	TURBIDITY	(JCU)	15	3 A 2
00076	TURBIDITY	(FTU)	15	3 A 2
00095	SPECIFIC CONDUCTANCE	US/CM @ 25C	52	3 A 2
00300	OXYGEN DISSOLVED	(MG/L)	14.2	3 A 3
00301	OXYGEN DIS. PERCENT	% OF SATURATION	98	3 A 2
00340	COD HIGH LEVEL MG/L	(MG/L)	16	3 A 2
00400	PH	(STANDARD UNITS)	5.20	3 A 2
00410	ALKALINITY TOTAL	(MG/L AS CACO3)	1	3 A 2
00500	RESIDUE SOLIDS	(MG/L)	96	3 A 2
00530	RESIDUE TOTAL	(MG/L)	41	3 A 2
00556	OIL AND GREASE REC.	(MG/L)	0	3 A 0
00600	NITROGEN TOTAL	(MG/L AS N)	0.84	3 A 2
00605	NITROGEN ORGANIC T.	(MG/L AS N)	0.60	3 A 2
00610	NITROGEN AMMONIA T.	(MG/L AS N)	0.080	3 A 3
00615	NITROGEN,NITRITE T.	MG/L AS N	0.010	3 A 3
00620	NITROGEN NITRATE T.	MG/L AS N	0.150	3 A 2
00623	NITROGEN DISSOLVED	(MG/L AS N)	0	3 2
00624	NITROGEN SUSPENDED	(MG/L AS N)	0.64	3 A 2
00625	NITROGEN AMMONIA T.	(MG/L AS N)	0.68	3 A 2
00630	NO2 + NO3 TOTAL	(MG/L AS N)	0.160	3 A 2
00665	PHOSPHOROUS TOTAL	(MG/L AS P)	0.150	3 A 3

RECORD NUMBER: 97900025 -- CONTINUED

CODE	PARAMETER NAME	UNITS	VALUE	R Q M P
00666	PHOSPHOROUS DISS.	(MG/L AS P)	0.021	3 A 3
00681	CARBON ORGANIC DIS.	(MG/L AS C)	5.7	3 A 2
00689	CARBON ORGANIC S.	(MG/L AS C)	1.5	3 A 2
00900	HARDNESS TOTAL	(MG/L AS CAO3)	10	3 A 1
00902	NONCARBONATE HARD. F	(MG/L AS CACO3)	9	3 A 1
00915	CALCIUM DISSOLVED	(MG/L AS CA)	2.9	3 A 2
00925	MAGNESIUM DISSOLVED	(MG/L AS MG)	0.60	3 A 1
00930	SODIUM DISSOLVED	(MG/L AS NA)	5.4	3 A 2
00931	SODIUM ADSORPTION R.	(RATIO)	0.8	3 A 1
00932	SODIUM PERCENT	(PERCENT)	52	3 A 2
00935	POTASSIUM DISSOLVED	(MG/L AS K)	0.80	3 A 1
00940	CHLORIDE DISSOLVED	(MG/L AS CL)	9.0	3 A 2
00945	SULFATE DISSOLVED	(MG/L AS SO4)	7.0	3 A 2
00950	FLUORIDE DISSOLVED	(MG/L AS F)	0.10	3 A 1
00955	SILICA DISSOLVED	(MG/L AS SIO2)	4.7	3 A 2
01000	ARSENIC DISSOLVED	(UG/L AS AS)	1	3 A 1
01002	ARSENIC TOTAL	(UG/L AS AS)	1	3 A 1
01005	BARIUM DISSOLVED	(UG/L AS BA)	200	3 A 2
01006	BARIUM SUSPENDED	(UG/L AS BA)	0	3 A 0
01007	BARIUM TOTAL	(UG/L AS BA)	200	3 A 2
01025	CADMNIUM DISSOLVED	(UG/L AS CD)	7	3 A 1
01026	CADMNIUM SUSPENDED	(UG/L AS CD)	1	3 A 1
01027	CADMNIUM TOTAL	(UG/L AS CD)	8	3 A 1
01030	CHROMIUM DISSOLVED	(UG/L AS CR)	2	1 3 A 1
01031	CHROMIUM SUSPENDED	(UG/L AS CR)	29	3 A 1
01034	CHROMIUM TOTAL	(UG/L AS CR)	30	3 A 1
01035	COBALT DISSOLVED	(UG/L AS CO)	2	1 3 A 1
01036	COBALT SUSPENDED	(UG/L AS CO)	0	3 A 0
01037	COBALT TOTAL	(UG/L AS CO)	2	1 3 A 1
01040	COPPER DISSOLVED	(UG/L AS CU)	2	1 3 A 1
01041	COPPER SUSPENDED	(UG/L AS CU)	6	3 A 1
01042	COPPER TOTAL	(UG/L AS CU)	7	3 A 1
01044	IRON SUSPENDED	(UG/L AS FE)	1800	3 A 2
01045	IRON TOTAL	(UG/L AS FE)	1900	3 A 2
01046	IRON DISSOLVED	(UG/L AS FE)	140	3 A 2
01049	LEAD DISSOLVED	(UG/L AS PB)	36	3 2
01050	LEAD SUSPENDED	(UG/L AS PB)	9	3 A 1
01051	LEAD TOTAL	(UG/L AS PB)	45	3 1
01054	MANGANESE SUSPENDED	(UG/L AS MN)	60	3 A 2
01055	MANGANESE TOTAL	(UG/L AS MN)	170	3 A 2
01056	MANGANESE DISSOLVED	(UG/L AS MN)	110	3 A 2
01075	SILVER DISSOLVED	(UG/L AS AG)	0	U 3 A 0

Appendix D: Sample Output

RECORD NUMBER: 97900025 -- CONTINUED

CODE	PARAMETER NAME	UNITS	VALUE	R Q M P
01076	SILVER SUSPENDED	(UG/L AS AG)	0	3 A 0
01077	SILVER TOTAL	(UG/L AS AG)	0	U 3 A 0
01090	ZINC DISSOLVED	(UG/L AS ZN)	20	1 3 A 1
01091	ZINC SUSPENDED	(UG/L AS ZN)	10	3 A 1
01092	ZINC TOTAL	(UG/L AS ZN)	20	2 3 A 1
01145	SELENIUM DISSOLVED	(UG/L AS SE)	1	1 3 A 1
01146	SELENIUM SUSPENDED	(UG/L AS SE)	0	3 A 0
01147	SELENIUM TOTAL	(UG/L AS SE)	1	1 3 A 1
31501	COLIFORM, TOTAL	COLS./100 ML	8800	3 A 2
31616	COLIFORM, FECAL	COLS./100 ML	630	3 A 2
31673	FECAL STRPT KF AGAR	COLS./100 ML	450	3 A 2
60050	PHYTO TYPE-I C/ML	CELLS/ML	1600	3 A 2
70300	RESIDUE DIS 180C	MG/L	40	3 A 2
70301	DISSOLVED SOLIDS SUM	MG/L	32	3 A 2
70302	DISSOLVED SOLIDS	TONS/DAY	4390	D A 3
70303	RESIDUE DIS TON/ACFT	T/AC-FT	0.05	3 A 2
70331	SED-SUSP-SIEVE-.062	%	63	3 A 2
70953	CHL-A PHY CHROMA FL	UG/L	5.83	3 A 3
70954	CHLOROPHYLL-B, PHYT.	UG/L	0.000	3 A 3
71887	NITROGEN, TOTAL -NO3	MG/L AS NO3	3.7	3 A 2
71890	MERCURY DISSOLVED	UG/L AS HG	0.5	1 3 A 1
71895	MERCURY SUSPENDED	UG/L AS HG	0	3 A 0
71900	MERCURY, TOT.REC.	UG/L AS HG	0.50	1 3 A 1
80154	CONCENTRATION,S.SED.	MG/L	85	3 A 2
80155	DISCHARGE,SUSP.SED.	T/DAY	9320	1 3 A 3

RECORD NUMBER: 97900025

STATION ID: USGS 01096550

STATION NAME: MERRIMACK RIVER ABOVE LOWELL, MA

COLLECTION DATE: 03-09-1979 0800 - -

CATIONS	(MG/L)	(MEQ/L)	ANIONS	(MG/L)	(MEQ/L)
CALCIUM, DISS. MG/L	2.900	0.145	CHLORIDE, DISS. MG/L	9.000	0.254
MAGNESIUM, DISS. MG/L	0.600	0.050	SULFATE, DISS. MG/L	7.000	0.146
SODIUM, DISS. MG/L	5.401	0.235	FLUORIDE, DISS. MG/L	0.101	0.006
POTASSIUM, DISS. MG/L	0.801	0.021	ALKALINITY, FET, FLD	1.000	0.020
IRON, DISS. UG/L	140.000	0.008			
MANGANESE, DISS. UG/L	110.001	0.005			
<hr/>			<hr/>		
TOTAL	0.462		TOTAL	0.425	
PERCENT DIFFERENCE = 4.08					

2.4 Option 2.4.1 -- List Station Records (qwshowsite) -- Example Output

DISTRICT SITE FILE CONTENTS - RETRIEVED ON TUE, 09 FEB 1988 @ 09:33:29

STATION NAME:	WHITMAN RIVER NEAR WESTMINSTER, MA	STATION NUMBER:	01094340
STATE:	25	COUNTY:	027
LATITUDE / LONGITUDE :	200000 / 0715202	LATITUDE ACCURACY:	DISTRICT: 25
RECORD CREATED:	19850606	GAGE/SURFACE DATUM:	UPDATED: 19861230
SITE USE CODE:	ACTIVE	HYDROLOGIC UNIT:	BASIN CODE: 1
LAND NET LOCATION:		ALTITUDE METHOD:	ALTITUDE ACCURACY:
NAME OF LOCATION MAP:		MAP SCALE:	SOURCE AGENCY: USGS
DATE SITE ESTAB. OR INVENT.:		REMARKS:	TWEEDLE AND TWEEDLDUM
GAGE HEIGHT AT NO-FLOW: 27		CONTRIB. DRAIN AREA:	DRAINAGE AREA: 23.231
CREST-STAGE UPSTREAM ELEVATION:		BASE DISCHARGE:	
CREST-STAGE DOWNSTRM ELEVATION:		<u>TYPE OF DATA COLLECTED AT SITE: STATUS</u>	<u>INSTRUMENTATION AT SITE: STATUS</u>
<u>TYPE OF SITE</u>		WATER QUALITY - INTERMITTENT: ACTIVE	
STREAM			
METEORLOGICAL			

2.4 Option 2.4.3 List Parameter Code Dictionary (qwpcdlist) -- Example Output

PARAMETER CODE LIST

CODE	SHORT NAME	ORDER	LONG NAME
00001	CROSS-SECTION (FEET)	02900	CROSS-SECTION LOCATION FEET FROM RIGHT B
00002	CROSS-SECTION (%)	03000	CROSS-SECTION LOCATION PERCENT FROM RIGH
00003	SAMPLING DEPTH (FT.)	07300	SAMPLING DEPTH (FEET)
00004	STREAM WIDTH (FEET)	01600	STREAM WIDTH (FEET)
00005	CROSS-SECTION (%)	03100	CROSS-SECTION LOCATION VERTICAL (PERCENT
00008	SAMPLE ACCT. NUMBER	01000	SAMPLE ACCOUNTING NUMBER
00009	CROSS-SECTION (FT.)	02700	CROSS-SECTION LOCATION FEET FROM LEFT BA
00010	WATER TEMPERATURE	20000	WATER TEMPERATURE, DEGREES CENTIGRADE
00011	WATER TEMP. DEG. F.		WATER TEMPERATURE, (DEGREES) FARENHEIT
00012	EVAP TEMP (48" PAN)	19700	EVAPORATION TEMPERATURE 48" PAN (DEGREES
00013	EVAP TEMP (24" PAN)	19600	EVAPORATION TEMPERATURE 24" PAN (DEGREES
00014	WET BULB TEMP. DEG.	19500	WET BULB TEMPERATURE (DEGREES) CENTIGRAD
00020	AIR TEMPERATURE	19400	TEMPERATURE, AIR, DEGREES CENTIGRADE
00021	TEMPERATURE DEG. F		TEMPERATURE, AIR, DEGREES FAHRENHEIT
00022	LENGTH OF EXPOSURE	18000	LENGTH OF EXPOSURE (DAYS)
00023	SAMPLE WEIGHT (LBS)	18100	SAMPLE WEIGHT (POUNDS)
00024	SAMPLE LENGTH (IN)	18200	SAMPLE LENGTH (INCHES)

2.4 Option 2.4.6 -- List State/County Data (qwckstcty)-- Example Output

STATE NAME: FLORIDA	MIN LAT: 242500
STATE ABBR: FL	MAX LAT: 310036 MIN ALT: 00000
STATE CODE: 12	MIN LONG: 0800238 MAX ALT: 00345
LAST UPDAT: 19831116	MAX LONG: 0873824

COUNTY NAME: ALACHUA	MIN LAT: 292510
COUNTY CODE: 001	MAX LAT: 295625
STATE CODE: 12	MIN LONG: 0820117
LAST UPDAT: 19831108	MAX LONG: 0823949

COUNTY NAME: BAKER	MIN LAT: 300808
COUNTY CODE: 003	MAX LAT: 303438
STATE CODE: 12	MIN LONG: 0820219
LAST UPDAT: 19831108	MAX LONG: 0822732

2.4 Option 2.4.7 -- Dump Parameter Code Dictionary,with precision codes (qwpccddump)-- Example Output

PARAMETER CODE LIST

CODE	SHORT NAME	ORDER	LONG NAME	UNITS	MEQ	F	ROUNDING
00001	CROSS-SECTION (FEET)	02900	CROSS-SECTION LOCATION FEET FROM RIGHT B	(FEET)	00000	02233333 2	
00002	CROSS-SECTION (%)	03000	CROSS-SECTION LOCATION PERCENT FROM RIGH	(PERCENT)	00000	0223333332	
00003	SAMPLING DEPTH (FT.)	07300	SAMPLING DEPTH (FEET)	FEET	00000	0223333332	
00004	STREAM WIDTH (FEET)	01600	STREAM WIDTH (FEET)	(FEET)	00000	0223333332	
00005	CROSS-SECTION (%)	03100	CROSS-SECTION LOCATION VERTICAL (PERCENT	(PERCENT)	00000	0223313332	
00008	SAMPLE ACCT. NUMBER	01000	SAMPLE ACCOUNTING NUMBER	(NUMBER)	00000	0001234562	
00009	CROSS-SECTION (FT.)	02700	CROSS-SECTION LOCATION FEET FROM LEFT BA	(FEET)	00000	0223333332	
00010	WATER TEMPERATURE	20000	WATER TEMPERATURE, DEGREES CENTIGRADE	(DEGREES)	00000	0012333331	
00011	WATER TEMP. DEG. F.		WATER TEMPERATURE, (DEGREES) FARENHEIT	(DEGREES)		012333331	
00012	EVAP TEMP (48" PAN)	19700	EVAPORATION TEMPERATURE 48" PAN (DEGREES	(DEGREES)	00000	0012333331	
00013	EVAP TEMP (24" PAN)	19600	EVAPORATION TEMPERATURE 24" PAN (DEGREES	(DEGREES)	00000	0012333331	
00014	WET BULB TEMP. DEG.	19500	WET BULB TEMPERATURE (DEGREES) CENTIGRAD	(DEGREES)	00000	0012333331	
00020	AIR TEMPERATURE	19400	TEMPERATURE, AIR, DEGREES CENTIGRADE	DEGREES	00000	0012333331	
00021	TEMPERATURE DEG. F		TEMPERATURE, AIR, DEGREES FAHRENHEIT	DEGREES		12333331	
00022	LENGTH OF EXPOSURE	18000	LENGTH OF EXPOSURE (DAYS)	(DAYS)	00000	0001234562	

3.1 Option 1 -- Retrieve NWQL Data (qwgetlab.como) -- Example Output

```
qwgetlab initiated: Thu Feb 6 09:28:54 EST 1997
Working in directory: /usr/opt/nwis/data/auxdata/montana_data
Renaming old copy of qwcards to qwcards.970206.092854
Searching for lab data for user 30 in: /var/ftp/incoming/.wrd_only/nwis.nwql
Checksum OK for: ADATA.30.136.177.19.63.130.11.51.124.19970120.195252.3916.t.a
Moving to qwcards
Checksum OK for: ADATA.30.136.177.19.63.130.11.51.124.19970121.194036.15868.t.a
Appending to qwcards
Checksum failed for: ADATA.30.136.177.19.63.130.11.51.124.19970123.215817.40178.t.a
Found 2 files containing lab data.
```

3.2 Option 2 -- Process Laboratory Accounting Records (qwlabweek)-- Example Output

```
=====
Example of qwlabweek for file /usr/opt/nwis/data/watsave/
qwacctng.qwenter.970422.1243
```

```
-----
WHICH PROGRAM WAS USED TO INPUT YOUR LAB DATA?
```

```
C -- qwcardsin
E -- qwenter
```

```
PLEASE ENTER C OR E: e
```

```
PLEASE ENTER THE DATE [YYMMDD] AND TIME [HHMM] THE JOB WAS RUN
```

```
YYMMDDHHMM
9704221243
```

```
ACCOUNTING INPUT FILE IS : /usr/opt/nwis/data/watsave/
qwacctng.qwenter.970422.1243
```

```
LABWEEK REPORT FILE IS : labweek.970811.1041
```

```
STOP: LABWEEK FINISHED
```

4 Option 4.1 -- Enter NWQL Data (qwcardsin) -- Example watlist Output

QW DATA BASE PATHNAME IS : WATDATA>QW>QWFILE

** FEB 08 1988 AT 1741 NWIS 88.1 PROGRAM QWCARDSIN TRANSACTION NO.: 1

United States Department of the Interior
 U.S. Geological Survey
 Water Resources Division
 National Laboratory
 Arvada, Colorado

RECORD NO.: 97900025
 SITE ID: 01096550 LAB ID NO.: PROJECT:
 STATION NAME: MERRIMACK RIVER ABOVE LOWELL, MA STATE: 25
 BEGIN DATE: 03-09-1979 AT 0800 END DATE: - - AT COUNTY: 017
 GEOLOGIC UNIT: DATA TYPES:
 STATUS: 7 SOURCE: 9 HYD. CONDITION: A TYPE: 9 HYD. EVENT: 9
 MEDIUM: 0 REMARKS TO LAB:
 SAMPLE COST: \$ REMARKS FROM LAB:
 SCHEDULES USED:
 NO. PARAMETERS: 92 PROCESSING STATUS: R

CODE	PARAMETER NAME	UNITS	VALUE	R	M	S	
				E	Q	E	I
				M	A	T	G
UPDATE 00010	WATER TEMPERATURE	(DEGREES)	0.5	3	A	1	
UPDATE 00020	AIR TEMPERATURE	DEGREES	6.5	3	A	2	
UPDATE 00028	ANALYZING AGENCY	(CODE NUMBER)	80010	3	A	5	
UPDATE 00061	DISCHARGE INS. (F/S)	(FEET/SECOND)	40600	3	A	2	
UPDATE 00070	TURBIDITY	(JCU)	15	3	A	2	
UPDATE 00076	TURBIDITY	(FTU)	15	3	A	2	
UPDATE 00095	SPECIFIC CONDUCTANCE	US/CM @ 25C	52	3	A	2	
UPDATE 00300	OXYGEN DISSOLVED	(MG/L)	14.2	3	A	3	
UPDATE 00301	OXYGEN DIS. PERCENT	% OF SATURATION	98	3	A	2	
UPDATE 00340	COD HIGH LEVEL MG/L	(MG/L)	16	3	A	2	
UPDATE 00400	PH	(STANDARD UNITS)	5.20	3	A	2	
UPDATE 00410	ALKALINITY TOTAL	(MG/L AS CACO3)	1	3	A	2	
UPDATE 00500	RESIDUE SOLIDS	(MG/L)	96	3	A	2	
UPDATE 00530	RESIDUE TOTAL	(MG/L)	41	3	A	2	
UPDATE 00556	OIL AND GREASE REC.	(MG/L)	0	3	A	0	
UPDATE 00600	NITROGEN TOTAL	(MG/L AS N)	0.84	3	A	2	
UPDATE 00605	NITROGEN ORGANIC T.	(MG/L AS N)	0.60	3	A	2	

FEB 08 1988

SAMPLE NUMBER: 97900025 -- CONTINUED

	CODE	PARAMETER NAME	UNITS	VALUE	R	M	S	
					E	Q	E	I
					M	A	T	G
UPDATE	00610	NITROGEN AMMONIA T.	(MG/L AS N)	0.080	3	A	3	
UPDATE	00615	NITROGEN,NITRITE T.	MG/L AS N	0.010	3	A	3	
UPDATE	00620	NITROGEN NITRATE T.	MG/L AS N	0.150	3	A	2	
UPDATE	00623	NITROGEN DISSOLVED	(MG/L AS N)	0	3		2	
UPDATE	00624	NITROGEN SUSPENDED	(MG/L AS N)	0.64	3	A	2	
UPDATE	00625	NITROGEN AMMONIA T.	(MG/L AS N)	0.68	3	A	2	
UPDATE	00630	NO2 + NO3 TOTAL	(MG/L AS N)	0.160	3	A	2	
UPDATE	00665	PHOSPHOROUS TOTAL	(MG/L AS P)	0.150	3	A	3	
UPDATE	00666	PHOSPHOROUS DISS.	(MG/L AS P)	0.021	3	A	3	
UPDATE	00681	CARBON ORGANIC DIS.	(MG/L AS C)	5.7	3	A	2	
UPDATE	00689	CARBON ORGANIC S.	(MG/L AS C)	1.5	3	A	2	
UPDATE	00900	HARDNESS TOTAL	(MG/L AS CAO3)	10	3	A	1	
UPDATE	00902	NONCARBONATE HARD. F	(MG/L AS CACO3)	9	3	A	1	
UPDATE	00915	CALCIUM DISSOLVED	(MG/L AS CA)	2.9	3	A	2	
UPDATE	00925	MAGNESIUM DISSOLVED	(MG/L AS MG)	0.60	3	A	1	
UPDATE	00930	SODIUM DISSOLVED	(MG/L AS NA)	5.4	3	A	2	
UPDATE	00931	SODIUM ADSORPTION R.	(RATIO)	0.8	3	A	1	
UPDATE	00932	SODIUM PERCENT	(PERCENT)	52	3	A	2	
UPDATE	00935	POTASSIUM DISSOLVED	(MG/L AS K)	0.80	3	A	1	
UPDATE	00940	CHLORIDE DISSOLVED	(MG/L AS CL)	9.0	3	A	2	
UPDATE	00945	SULFATE DISSOLVED	(MG/L AS SO4)	7.0	3	A	2	
UPDATE	00950	FLUORIDE DISSOLVED	(MG/L AS F)	0.10	3	A	1	
UPDATE	00955	SILICA DISSOLVED	(MG/L AS SIO2)	4.7	3	A	2	
UPDATE	01000	ARSENIC DISSOLVED	(UG/L AS AS)	1	3	A	1	
UPDATE	01002	ARSENIC TOTAL	(UG/L AS AS)	1	3	A	1	
UPDATE	01005	BARIUM DISSOLVED	(UG/L AS BA)	200	3	A	2	
UPDATE	01006	BARIUM SUSPENDED	(UG/L AS BA)	0	3	A	0	
UPDATE	01007	BARIUM TOTAL	(UG/L AS BA)	200	3	A	2	
UPDATE	01025	CADMIUM DISSOLVED	(UG/L AS CD)	7	3	A	1	
UPDATE	01026	CADMIUM SUSPENDED	(UG/L AS CD)	1	3	A	1	
UPDATE	01027	CADMIUM TOTAL	(UG/L AS CD)	8	3	A	1	
UPDATE	01030	CHROMIUM DISSOLVED	(UG/L AS CR)	2	1	3	A	1
UPDATE	01031	CHROMIUM SUSPENDED	(UG/L AS CR)	29	3	A	1	
UPDATE	01034	CHROMIUM TOTAL	(UG/L AS CR)	30	3	A	1	
UPDATE	01035	COBALT DISSOLVED	(UG/L AS CO)	2	1	3	A	1
UPDATE	01036	COBALT SUSPENDED	(UG/L AS CO)	0	3	A	0	
UPDATE	01037	COBALT TOTAL	(UG/L AS CO)	2	1	3	A	1
UPDATE	01040	COPPER DISSOLVED	(UG/L AS CU)	2	1	3	A	1
UPDATE	01041	COPPER SUSPENDED	(UG/L AS CU)	6	3	A	1	
UPDATE	01042	COPPER TOTAL	(UG/L AS CU)	7	3	A	1	
UPDATE	01044	IRON SUSPENDED	(UG/L AS FE)	1800	3	A	2	
UPDATE	01045	IRON TOTAL	(UG/L AS FE)	1900	3	A	2	

Appendix D: Sample Output

FEB 08 1988

SAMPLE NUMBER: 97900025 -- CONTINUED

CODE	PARAMETER NAME	UNITS	VALUE	R	M	S	
				E	Q	E	I
				M	A	T	G
UPDATE 01046	IRON DISSOLVED	(UG/L AS FE)	140	3	A	2	
UPDATE 01049	LEAD DISSOLVED	(UG/L AS PB)	36	3		2	
UPDATE 01050	LEAD SUSPENDED	(UG/L AS PB)	9	3	A	1	
UPDATE 01051	LEAD TOTAL	(UG/L AS PB)	45	3		1	
UPDATE 01054	MANGANESE SUSPENDED	(UG/L AS MN)	60	3	A	2	
UPDATE 01055	MANGANESE TOTAL	(UG/L AS MN)	170	3	A	2	
UPDATE 01056	MANGANESE DISSOLVED	(UG/L AS MN)	110	3	A	2	
UPDATE 01075	SILVER DISSOLVED	(UG/L AS AG)	0	U	3	A	0
UPDATE 01076	SILVER SUSPENDED	(UG/L AS AG)	0		3	A	0
UPDATE 01077	SILVER TOTAL	(UG/L AS AG)	0	U	3	A	0
UPDATE 01090	ZINC DISSOLVED	(UG/L AS ZN)	20	1	3	A	1
UPDATE 01091	ZINC SUSPENDED	(UG/L AS ZN)	10	3	A	1	
UPDATE 01092	ZINC TOTAL	(UG/L AS ZN)	20	2	3	A	1
UPDATE 01145	SELENIUM DISSOLVED	(UG/L AS SE)	1	1	3	A	1
UPDATE 01146	SELENIUM SUSPENDED	(UG/L AS SE)	0		3	A	0
UPDATE 01147	SELENIUM TOTAL	(UG/L AS SE)	1	1	3	A	1
UPDATE 31501	COLIFORM, TOTAL	COLS./100 ML	8800	3	A	2	
UPDATE 31616	COLIFORM, FECAL	COLS./100 ML	630	3	A	2	
UPDATE 31673	FECAL STRPT KF AGAR	COLS./100 ML	450	3	A	2	
UPDATE 60050	PHYTO TYPE-I C/ML	CELLS/ML	1600	3	A	2	
UPDATE 70300	RESIDUE DIS 180C	MG/L	40	3	A	2	
UPDATE 70301	DISSOLVED SOLIDS SUM	MG/L	32	3	A	2	
UPDATE 70302	DISSOLVED SOLIDS	TONS/DAY	4390	D	A	3	
UPDATE 70303	RESIDUE DIS TON/ACFT	T/AC-FT	0.05	3	A	2	
UPDATE 70331	SED-SUSP-SIEVE-.062	%	63	3	A	2	
UPDATE 70953	CHL-A PHY CHROMA FL	UG/L	5.83	3	A	3	
UPDATE 70954	CHLOROPHYLL-B, PHYT.	UG/L	0.000	3	A	3	
UPDATE 71887	NITROGEN, TOTAL -NO3	MG/L AS NO3	3.7	3	A	2	
UPDATE 71890	MERCURY DISSOLVED	UG/L AS HG	0.5	1	3	A	1
UPDATE 71895	MERCURY SUSPENDED	UG/L AS HG	0		3	A	0
UPDATE 71900	MERCURY, TOT.REC.	UG/L AS HG	0.50	1	3	A	1
UPDATE 80154	CONCENTRATION,S.SED.	MG/L	85		3	A	2
UPDATE 80155	DISCHARGE,SUSP.SED.	T/DAY	9320	1	3	A	3

***** ERROR REPORT FOR TRANSACTION NO. 1 *****

CATION/CONDUCTANCE RATIO OUTSIDE LIMITS .92 TO 1.24

DISSOLVED SOLIDS/CALCULATED SOLIDS RATIO OUTSIDE LIMITS .9 TO 1.12

70302 STORED VALUE (4390) DOES NOT AGREE WITH COMPUTED VALUE (4380)

RECORD NUMBER: 97900025

STAION ID: USGS 01096550

STATION NAME: MERRIMACK RIVER ABOVE LOWELL, MA

COLLECTION DATE: 03-09-1979 0800 - -

CATIONS	(MG/L)	(MEQ/L)	ANIONS	(MG/L)	(MEQ/L)
CALCIUM, DISS. MG/L	2.900	0.145	CHLORIDE, DISS. MG/L	9.000	0.254
MAGNESIUM, DISS. MG/L	0.600	0.050	SULFATE, DISS. MG/L	7.000	0.146
SODIUM, DISS. MG/L	5.401	0.235	FLUORIDE, DISS. MG/L	0.101	0.006
POTASSIUM, DISS. MG/L	0.801	0.021	ALKALINITY, FET, FLD	1.000	0.020
IRON, DISS. UG/L	140.000	0.008			
MANGANESE, DISS. UG/L	110.001	0.005			
<hr/>			<hr/>		
TOTAL	0.462		TOTAL	0.425	
PERCENT DIFFERENCE = 4.08					

4 Option 4.2 -- Update Water-Quality File (qwenter) -- Example watlist Output

QW DATA BASE PATHNAME IS : WATDATA>QW>QWFILE

** FEB 08 1988 AT 1739 NWIS 88.1 PROGRAM QWENTER TRANSACTION NO.: 1

RECORD NO.: 97900025
 SITE ID: 01096550 LAB ID NO.: PROJECT:
 STATION NAME: MERRIMACK RIVER ABOVE LOWELL, MA STATE: 25
 BEGIN DATE: 03-09-1979 AT 0800 END DATE: - - AT COUNTY: 017
 GEOLOGIC UNIT: DATA TYPES:
 STATUS: 7 SOURCE: 9 HYD. CONDITION: A TYPE: 9 HYD. EVENT: 9
 MEDIUM: 0 REMARKS TO LAB:
 SAMPLE COST: \$ REMARKS FROM LAB:
 SCHEDULES USED:
 NO. PARAMETERS: 92 PROCESSING STATUS: R

CODE	PARAMETER NAME	UNITS	VALUE	R	M	S	
				E	Q	E	I
				M	A	T	G
UPDATE 00010	WATER TEMPERATURE	(DEGREES)	0.5	3	A	1	
UPDATE 00020	AIR TEMPERATURE	DEGREES	6.5	3	A	2	
UPDATE 00028	ANALYZING AGENCY	(CODE NUMBER)	80010	3	A	5	
UPDATE 00061	DISCHARGE INS. (F/S)	(FEET/SECOND)	40600	3	A	2	
UPDATE 00070	TURBIDITY	(JCU)	15	3	A	2	
UPDATE 00076	TURBIDITY	(FTU)	15	3	A	2	
UPDATE 00095	SPECIFIC CONDUCTANCE	US/CM @ 25C	52	3	A	2	
UPDATE 00300	OXYGEN DISSOLVED	(MG/L)	14.2	3	A	3	
UPDATE 00301	OXYGEN DIS. PERCENT	% OF SATURATION	98	3	A	2	
UPDATE 00340	COD HIGH LEVEL	MG/L	16	3	A	2	
UPDATE 00400	PH	(STANDARD UNITS)	5.20	3	A	2	
UPDATE 00410	ALKALINITY TOTAL	(MG/L AS CACO3)	1	3	A	2	
UPDATE 00500	RESIDUE SOLIDS	(MG/L)	96	3	A	2	
UPDATE 00530	RESIDUE TOTAL	(MG/L)	41	3	A	2	
UPDATE 00556	OIL AND GREASE REC.	(MG/L)	0	3	A	0	
UPDATE 00600	NITROGEN TOTAL	(MG/L AS N)	0.84	3	A	2	
UPDATE 00605	NITROGEN ORGANIC T.	(MG/L AS N)	0.60	3	A	2	
UPDATE 00610	NITROGEN AMMONIA T.	(MG/L AS N)	0.080	3	A	3	
UPDATE 00615	NITROGEN,NITRITE T.	MG/L AS N	0.010	3	A	3	
UPDATE 00620	NITROGEN NITRATE T.	MG/L AS N	0.150	3	A	2	
UPDATE 00623	NITROGEN DISSOLVED	(MG/L AS N)	0	3		2	
UPDATE 00624	NITROGEN SUSPENDED	(MG/L AS N)	0.64	3	A	2	
UPDATE 00625	NITROGEN AMMONIA T.	(MG/L AS N)	0.68	3	A	2	

FEB 08 1988		SAMPLE NUMBER: 97900025 -- CONTINUED				R	M	S	
	CODE	PARAMETER NAME	UNITS	VALUE		E M	Q A	E T	I G
UPDATE	00630	NO2 + NO3 TOTAL	(MG/L AS N)	0.160		3	A	2	
UPDATE	00665	PHOSPHOROUS TOTAL	(MG/L AS P)	0.150		3	A	3	
UPDATE	00666	PHOSPHOROUS DISS.	(MG/L AS P)	0.021		3	A	3	
UPDATE	00681	CARBON ORGANIC DIS.	(MG/L AS C)	5.7		3	A	2	
UPDATE	00689	CARBON ORGANIC S.	(MG/L AS C)	1.5		3	A	2	
UPDATE	00900	HARDNESS TOTAL	(MG/L AS CAO3)	10		3	A	1	
UPDATE	00902	NONCARBONATE HARD. F	(MG/L AS CACO3)	9		3	A	1	
UPDATE	00915	CALCIUM DISSOLVED	(MG/L AS CA)	2.9		3	A	2	
UPDATE	00925	MAGNESIUM DISSOLVED	(MG/L AS MG)	0.60		3	A	1	
UPDATE	00930	SODIUM DISSOLVED	(MG/L AS NA)	5.4		3	A	2	
UPDATE	00931	SODIUM ADSORPTION R.	(RATIO)	0.8		3	A	1	
UPDATE	00932	SODIUM PERCENT	(PERCENT)	52		3	A	2	
UPDATE	00935	POTASSIUM DISSOLVED	(MG/L AS K)	0.80		3	A	1	
UPDATE	00940	CHLORIDE DISSOLVED	(MG/L AS CL)	9.0		3	A	2	
UPDATE	00945	SULFATE DISSOLVED	(MG/L AS SO4)	7.0		3	A	2	
UPDATE	00950	FLUORIDE DISSOLVED	(MG/L AS F)	0.10		3	A	1	
UPDATE	00955	SILICA DISSOLVED	(MG/L AS SIO2)	4.7		3	A	2	
UPDATE	01000	ARSENIC DISSOLVED	(UG/L AS AS)	1		3	A	1	
UPDATE	01002	ARSENIC TOTAL	(UG/L AS AS)	1		3	A	1	
UPDATE	01005	BARIUM DISSOLVED	(UG/L AS BA)	200		3	A	2	
UPDATE	01006	BARIUM SUSPENDED	(UG/L AS BA)	0		3	A	0	
UPDATE	01007	BARIUM TOTAL	(UG/L AS BA)	200		3	A	2	
UPDATE	01025	CADMIUM DISSOLVED	(UG/L AS CD)	7		3	A	1	
UPDATE	01026	CADMIUM SUSPENDED	(UG/L AS CD)	1		3	A	1	
UPDATE	01027	CADMIUM TOTAL	(UG/L AS CD)	8		3	A	1	
UPDATE	01030	CHROMIUM DISSOLVED	(UG/L AS CR)	2		1	3	A	1
UPDATE	01031	CHROMIUM SUSPENDED	(UG/L AS CR)	29		3	A	1	
UPDATE	01034	CHROMIUM TOTAL	(UG/L AS CR)	30		3	A	1	
UPDATE	01035	COBALT DISSOLVED	(UG/L AS CO)	2		1	3	A	1
UPDATE	01036	COBALT SUSPENDED	(UG/L AS CO)	0		3	A	0	
UPDATE	01037	COBALT TOTAL	(UG/L AS CO)	2		1	3	A	1
UPDATE	01040	COPPER DISSOLVED	(UG/L AS CU)	2		1	3	A	1
UPDATE	01041	COPPER SUSPENDED	(UG/L AS CU)	6		3	A	1	
UPDATE	01042	COPPER TOTAL	(UG/L AS CU)	7		3	A	1	
UPDATE	01044	IRON SUSPENDED	(UG/L AS FE)	1800		3	A	2	
UPDATE	01045	IRON TOTAL	(UG/L AS FE)	1900		3	A	2	
UPDATE	01046	IRON DISSOLVED	(UG/L AS FE)	140		3	A	2	
UPDATE	01049	LEAD DISSOLVED	(UG/L AS PB)	36		3		2	
UPDATE	01050	LEAD SUSPENDED	(UG/L AS PB)	9		3	A	1	
UPDATE	01051	LEAD TOTAL	(UG/L AS PB)	45		3		1	
UPDATE	01054	MANGANESE SUSPENDED	(UG/L AS MN)	60		3	A	2	

Appendix D: Sample Output

FEB 08 1988

SAMPLE NUMBER: 97900025 -- CONTINUED

CODE	PARAMETER NAME	UNITS	VALUE	R	M	S		
				E	Q	E	I	
M	A	T	G					
UPDATE 01055	MANGANESE TOTAL	(UG/L AS MN)	170		3	A	2	
UPDATE 01056	MANGANESE DISSOLVED	(UG/L AS MN)	110		3	A	2	
UPDATE 01075	SILVER DISSOLVED	(UG/L AS AG)	0	U	3	A	0	
UPDATE 01076	SILVER SUSPENDED	(UG/L AS AG)	0		3	A	0	
UPDATE 01077	SILVER TOTAL	(UG/L AS AG)	0	U	3	A	0	
UPDATE 01090	ZINC DISSOLVED	(UG/L AS ZN)	20	1	3	A	1	
UPDATE 01091	ZINC SUSPENDED	(UG/L AS ZN)	10		3	A	1	
UPDATE 01092	ZINC TOTAL	(UG/L AS ZN)	20	2	3	A	1	
UPDATE 01145	SELENIUM DISSOLVED	(UG/L AS SE)	1		1	3	A	1
UPDATE 01146	SELENIUM SUSPENDED	(UG/L AS SE)	0		3	A	0	
UPDATE 01147	SELENIUM TOTAL	(UG/L AS SE)	1	1	3	A	1	
UPDATE 31501	COLIFORM, TOTAL	COLS./100 ML	8800		3	A	2	
UPDATE 31616	COLIFORM, FECAL	COLS./100 ML	630		3	A	2	
UPDATE 31673	FECAL STRPT KF AGAR	COLS./100 ML	450		3	A	2	
UPDATE 60050	PHYTO TYPE-I C/ML	CELLS/ML	1600		3	A	2	
UPDATE 70300	RESIDUE DIS 180C	MG/L	40		3	A	2	
UPDATE 70301	DISSOLVED SOLIDS SUM	MG/L	32		3	A	2	
UPDATE 70302	DISSOLVED SOLIDS	TONS/DAY	4390	D	A	3		
UPDATE 70303	RESIDUE DIS TON/ACFT	T/AC-FT	0.05		3	A	2	
UPDATE 70331	SED-SUSP-SIEVE-.062	%	63		3	A	2	
UPDATE 70953	CHL-A PHY CHROMA FL	UG/L	5.83		3	A	3	
UPDATE 70954	CHLOROPHYLL-B, PHYT.	UG/L	0.000		3	A	3	
UPDATE 71887	NITROGEN, TOTAL -NO3	MG/L AS NO3	3.7		3	A	2	
UPDATE 71890	MERCURY DISSOLVED	UG/L AS HG	0.5	1	3	A	1	
UPDATE 71895	MERCURY SUSPENDED	UG/L AS HG	0		3	A	0	
UPDATE 71900	MERCURY, TOT.REC.	UG/L AS HG	0.50	1	3	A	1	
UPDATE 80154	CONCENTRATION,S.SED.	MG/L	85		3	A	2	
UPDATE 80155	DISCHARGE,SUSP.SED.	T/DAY	9320	1	3	A	3	

***** ERROR REPORT FOR TRANSACTION NO. 1 *****

CATION/CONDUCTANCE RATIO OUTSIDE LIMITS .92 TO 1.24

DISSOLVED SOLIDS/CALCULATED SOLIDS RATIO OUTSIDE LIMITS .9 TO 1.12

70302 STORED VALUE (4390) DOES NOT AGREE WITH COMPUTED VALUE (4380)

RECORD NUMBER: 97900025

STAION ID: USGS 01096550

STATION NAME: MERRIMACK RIVER ABOVE LOWELL, MA

COLLECTION DATE: 03-09-1979 0800 - -

CATIONS	(MG/L)	(MEQ/L)	ANIONS	(MG/L)	(MEQ/L)
CALCIUM, DISS. MG/L	2.900	0.145	CHLORIDE, DISS. MG/L	9.000	0.254
MAGNESIUM, DISS. MG/L	0.600	0.050	SULFATE, DISS. MG/L	7.000	0.146
SODIUM, DISS. MG/L	5.401	0.235	FLUORIDE, DISS. MG/L	0.101	0.006
POTASSIUM, DISS. MG/L	0.801	0.021	ALKALINITY, FET, FLD	1.000	0.020
IRON, DISS. UG/L	140.000	0.008			
MANGANESE, DISS. UG/L	110.001	0.005			
<hr/>			<hr/>		
TOTAL	0.462		TOTAL	0.425	
PERCENT DIFFERENCE = 4.08					

Appendix E. Algorithms for Calculated Parameters

Following are the algorithms used for calculated parameters. A list of required parameters for each algorithm is listed at the end of this file. The symbols are:

+ = addition
- = subtraction
* = multiplication
/ = division
** = exponentiation
ln = natural logarithm
! = preference

If left operand is present, the left operand will be used. If left operand is missing, the right operand will be used. **Note:** Users can check current algorithms by typing "qwalgcon" on the command line of UNIX.

OXYGEN DISSOLVED (PERCENT OF SATURATION)

PARAMETER 00301 CONVERTED ALGORITHM

NEGATIVES ARE ELIMINATED BY TAKING THE MAX USING ZERO ON THE LEFT

```
((00300. /(((00025.-(10.**8.107648849-(1750.285888672/(235.+00010.)))))(760.  
-(10.**8.107648849-(1750.285888672(235.+00010.)))))*1.427599907)*(2.718281746  
**(((143.348266602*(LN((00010.+273.149902344)/100.))((((00010.+273.149902344)  
/100.)*21.849197388)+173.429199219))+(249.633880615*(100.(00010.+273.149902344)  
)))+((((5.57199955*0.0001)*00095.)+((2.019999027*0.000000001)*(00095.**2.)))*(  
(0.014258998*((273.149902344+00010.)/100.))-0.033095993)(0.0017*((273.14990234  
4+00010.)/100.)***2.))!)0.))))* 100. )
```

ACIDITY, TOTAL (MG/L AS CACO3)

PARAMETER 00435 CONVERTED ALGORITHM

```
((71825. * 0.99216 )* 50.05 )
```

SOLIDS, NONVOLATILE ON IGNITION, SUSPENDED (MG/L)

PARAMETER 00540 CONVERTED ALGORITHM

NEGATIVES ARE ELIMINATED BY TAKING THE MAX USING ZERO ON THE LEFT

```
( 530. - 535. )
```

NITROGEN, TOTAL (MG/L AS N)

PARAMETER 00600 CONVERTED ALGORITHM

NEGATIVES ARE ELIMINATED BY TAKING THE MAX USING ZERO ON THE LEFT (This may change.)

```
( 625. + 630. )
```

NITROGEN, DISSOLVED (MG/L AS N)

PARAMETER 00602 CONVERTED ALGORITHM

NEGATIVES ARE ELIMINATED BY TAKING THE MAX USING ZERO ON THE LEFT

(623. + 631.)

NITROGEN, ORGANIC, TOTAL (MG/L AS N)
PARAMETER 00605 CONVERTED ALGORITHM

NEGATIVES ARE ELIMINATED BY TAKING THE MAX USING ZERO ON THE LEFT

(625. - 610.)

NITROGEN, ORGANIC, DISSOLVED (MG/L AS N)
PARAMETER 00607 CONVERTED ALGORITHM

NEGATIVES ARE ELIMINATED BY TAKING THE MAX USING ZERO ON THE LEFT

(623. - 608.)

NITROGEN, NITRATE, DISSOLVED (MG/L AS N)
PARAMETER 00618 CONVERTED ALGORITHM

NEGATIVES ARE ELIMINATED BY TAKING THE MAX USING ZERO ON THE LEFT

(631. - 613.)

NITROGEN, NITRATE, TOTAL (MG/L AS N)
PARAMETER 00620 CONVERTED ALGORITHM

NEGATIVES ARE ELIMINATED BY TAKING THE MAX USING ZERO ON THE LEFT

(630. - 615.)

NITROGEN, NITRATE, TOTAL IN BOTTOM MATERIAL (MG/KG AS N)
PARAMETER 00621 CONVERTED ALGORITHM

NEGATIVES ARE ELIMINATED BY TAKING THE MAX USING ZERO ON THE LEFT

(00633. -00616.)

PHOSPHATE, TOTAL (MG/L AS P04)
PARAMETER 00650 CONVERTED ALGORITHM

NEGATIVES ARE ELIMINATED BY TAKING THE MAX USING ZERO ON THE LEFT

(70507. * 3.06618)

PHOSPHATE, ORTHO, DISSOLVED (MG/L AS P04)
PARAMETER 00660 CONVERTED ALGORITHM

NEGATIVES ARE ELIMINATED BY TAKING THE MAX USING ZERO ON THE LEFT

(671. * 3.06618)

PHOSPHORUS, HYDROLYZABLE, TOTAL (MG/L AS P)
PARAMETER 00669 CONVERTED ALGORITHM

NEGATIVES ARE ELIMINATED BY TAKING THE MAX USING ZERO ON THE LEFT

(678. -70507.)

**PHOSPHORUS, ORGANIC, TOTAL (MG/L AS P)
PARAMETER 00670 CONVERTED ALGORITHM**

(665. - (678. !(70507. +0669.)))

**PHOSPHORUS, HYDROLYZABLE, DISSOLVED (MG/L AS P)
PARAMETER 00672 CONVERTED ALGORITHM**

NEGATIVES ARE ELIMINATED BY TAKING THE MAX USING ZERO ON THE LEFT

(677. - 671.)

**PHOSPHORUS, ORGANIC, DISSOLVED (MG/L AS P)
PARAMETER 00673 CONVERTED ALGORITHM**

(666. - (677. !(672. +0671.)))

**CARBON, ORGANIC, TOTAL IN BOTTOM MATERIAL, DRY WEIGHT (GM/KG)
PARAMETER 00687 CONVERTED ALGORITHM**

NEGATIVES ARE ELIMINATED BY TAKING THE MAX USING ZERO ON THE LEFT

(693. - 686.)

**CARBON, TOTAL (MG/L AS C)
PARAMETER 00690 CONVERTED ALGORITHM**

NEGATIVES ARE ELIMINATED BY TAKING THE MAX USING ZERO ON THE LEFT

(685. + 680.)

**HARDNESS, TOTAL (MG/L AS CACO3)
PARAMETER 00900 CONVERTED ALGORITHM**

((915.*0.0499)+((925.*0.08229)+(((1005.*0.00001456)!0.)+((1080.*0.00002283)0.)))* 50.05)

**NONCARBONATE HARDNESS, WATER, WHOLE, TOTAL, FIELD (MG/L AS AS CACO3)
PARAMETER 00902 CONVERTED ALGORITHM**

(((((00916.!00918.)*0.0499)+((00927.!00921.)*0.08229))+(((01082.!01084.)*0000 02283)!0.0))+(((01007.!01009)*0.00001456)!0.0))(((00450.!(00440.!99440.))*0.01 639)+0(((00447.0!(00445.!99445.))*0.03333)!0.0002))!((00419.!(00410.!(29813.!(99 430.!00431.))))/50.05))* 50.05)

**NONCARBONATE HARDNESS, WATER, WHOLE, TOTAL, LABORATORY (MG/L AS CACO3)
PARAMETER 00903 CONVERTED ALGORITHM**

(((((00916.!00918.)*0.0499)+((00927.!00921.)*0.08229))+(((01082.!01084.)*0.000 02283)!0.0))+(((01007.!01009)*0.00001456)!0.0)>(((00449.!(00451.!(90440.!95440 .))*0.01639)+0(((00446.0!(00448.!(90445.!95445.))*0.03333)!0.0002))!((00416.! 00417.!(00413.!(00418.!(00421.!(90410.!(90430.!(95410.!95430.))))))))50.05))* 50.05)

HARDNESS, NON-CARBONATE, WATER, DISSOLVED, FIELD, (MG/L AS CACO₃)
PARAMETER 00904 CONVERTED ALGORITHM

```
(((((00915.*0.0499)+(00925.*0.08229))+((01080.*0.00002283)!0.0))+((01005.*0.000  
01456)!0.0))(((00453.!29804.)*0.01639)+0(((00452.!29807.)*0.03333)!0.0002))!((  
39086.! (39036.!29802.))/50.05))* 50.05 )
```

HARDNESS, NON-CARBONATE, WATER, DISSOLVED, LABORATORY, (MG/L AS CACO₃)
PARAMETER 00905 CONVERTED ALGORITHM

```
(((((00915.*0.0499)+(00925.*0.08229))+((01080.*0.00002283)!0.0))+((01005.*0.000  
01456)!0.0))-(((29806.!29805.)*0.01639)+0((29809.!29808.)*0.03333)!0.0002))  
!((39087.! (29801.!29803.))/50.05))* 50.05 )
```

SODIUM ADSORPTION RATIO PARAMETER 00931 CONVERTED ALGORITHM

```
((930. * 0.0435 )/(((915.*0.0499)+(925.*0.08229))/2. )** 0.5 ))
```

SODIUM, PERCENT PARAMETER 00932 CONVERTED ALGORITHM

```
((930. *0.04350000)*100. )/(((915.*0.0499)+(925.*0.08229))+(930.*0.04350000)  
+(935. *0.02558)))
```

GAGE HEIGHT, ABOVE DATUM (METERS) PARAMETER 30207 CONVERTED ALGORITHM

```
( 65. * .304799974)
```

DISCHARGE, CUBIC METER PER SECOND
PARAMETER 30208 CONVERTED ALGORITHM

```
( 60. * 0.02832 )
```

DISCHARGE, INSTANTANEOUS, CUBIC METER PER SECOND
PARAMETER 30209 CONVERTED ALGORITHM

```
( 61. * .02832 )
```

DEPTH TO WATER LEVEL, METERS BELOW LAND SURFACE DATUM
PARAMETER 30210 CONVERTED ALGORITHM

```
(72019. * .304799974)
```

ELEVATION, ABOVE NATIONAL GEODETIC VERTICAL DATUM, (METERS)
PARAMETER 30211 CONVERTED ALGORITHM

```
(72020. * .304799974)
```

SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)
PARAMETER 70301 CONVERTED ALGORITHM

```
(((((((((((((((0.4917*((((((99440.!440.)!90440.)!95440.)!450.0)!453.0)!298
04.0)!0.))+0((((((99445.!445.)!90445.)!95445.)!447.0)!452.0)!29807.0)!0.0002))!
(0.599599838*((((((410.!90410.)!419.0)!29802.0)!29813.0)!39086.0)!39036.0)!99
430.0)!431.0)!0.))+915.)+925.)+930.)+940.)+945.)+(955.!0.0))+935.)+((631.*4.42
660000)!((618.*4.4266)+(613.*3.28619957)))!0.0))+((608.*1.287997961)!0.))+((71870
.!0.))+((746.!0.))+((723.!0.))+((71830.!0.))+((71865.!0.))+((950.!0.))+((671.*3.06618
)!0.))+((0.001*((((((((((((1000.!0.)+(1005.!0.))+(1010.0!0.0))+((1020.!0.))+((1025.!0.))
+(1030.!0.))+((1035.0!0.0))+((1040.!0.))+((1046.!0.))+((1049.!0.))+((1056.!0.))+((1060.!0.))+((1065.!0.))+((1075.!0.))+((1080.!0.))+((1085.0!0.0))+((1090.!0.))+((1100.0!0.0))+((1106.!0.))+((1120.0!0.0))+((1125.0!0.0))+((1130.0!0.0))+((1135.0!0.0))+((1145.!0.))+((1150.!0.))+((1160.0!0.0))+((71890.!0.))))
```

SOLIDS, DISSOLVED (TONS PER DAY)
PARAMETER 70302 CONVERTED ALGORITHM

```
((70300. !(((((((((((((0.4917*((((((99440.!440.)!90440.)!95440.)!450.0)
!453.0)!29804.0)!0.))+0((((((99445.!445.)!90445.)!95445.)!447.0)!452.0)!29807.0
)!0.0002))!(0.599599838*((((((410.!90410.)!419.0)!29802.0)!29813.0)!39086.0)!39036.0)!99
430.0)!431.0)!0.))+915.)+925.)+930.)+940.)+945.)+(955.!0.0))+935.)+((631.*4.42660000)!((618.*4.4266)+(613.*3.28619957)))!0.0))+((608.*1.287997961)!0.))+((71870
.!0.))+((746.!0.))+((723.!0.))+((71830.!0.))+((71865.!0.))+((950.!0.))+((671.*3.06618
)!0.))+((0.001*((((((((((((1000.!0.)+(1005.!0.))+(1010.0!0.0))+((1020.!0.))+((1025.!0.))
+(1030.!0.))+((1035.0!0.0))+((1040.!0.))+((1046.!0.))+((1049.!0.))+((1056.!0.))+((1060.!0.))+((1065.!0.))+((1075.!0.))+((1080.!0.))+((1085.0!0.0))+((1090.!0.))+((1100.0!0.0))+((1106.!0.))+((1120.0!0.0))+((1125.0!0.0))+((1130.0!0.0))+((1135.0!0.0))+((1145.!0.))+((1150.!0.))+((1160.0!0.0))+((71890.!0.))))*(61.
!60. ))* 0.0027 )
```

SOLIDS, DISSOLVED (TONS PER ACRE-FOOT)
PARAMETER 70303 CONVERTED ALGORITHM

```
((70300. !(((((((((((((0.4917*((((((99440.!440.)!90440.)!95440.)!450.0)
!453.0)!29804.0)!0.))+0((((((99445.!445.)!90445.)!95445.)!447.0)!452.0)!29807.0
)!0.0002))!(0.599599838*((((((410.!90410.)!419.0)!29802.0)!29813.0)!39086.0)!39036.0)!99
430.0)!431.0)!0.))+915.)+925.)+930.)+940.)+945.)+(955.!0.0))+935.)+((631.0*4.42660000)!((618.*4.4266)+(613.*3.28619957)))!0.0))+((608.*1.287997961)!0.))+((71870
.!0.))+((746.!0.))+((723.!0.))+((71830.!0.))+((71865.!0.))+((950.!0.))+((671.*3.06618
)!0.))+((0.001*((((((((((((1000.!0.)+(1005.!0.))+(1010.0!0.0))+((1020.!0.))+((1025.!0.))
+(1030.!0.))+((1035.0!0.0))+((1040.!0.))+((1046.!0.))+((1049.!0.))+((1056.!0.))+((1060.!0.))+((1065.!0.))+((1075.!0.))+((1080.!0.))+((1085.0!0.0))+((1090.!0.))+((1100.0!0.0))+((1106.!0.))+((1120.0!0.0))+((1125.0!0.0))+((1130.0!0.0))+((1135.0!0.0))+((1145.!0.))+((1150.!0.))+((1160.0!0.0))+((71890.!0.))))* 0
.00136 )
```

BIOMASS-CHLOROPHYLL RATIO, PLANKTON (UNITS)
PARAMETER 70949 CONVERTED ALGORITHM

```
((81354. -81353. )*1000. )/70953. )
```

**BIOMASS-CHLOROPHYLL RATIO, PERIPHYTON (UNITS)
PARAMETER 70950 CONVERTED ALGORITHM**

((00573. -00572.)*1000.)/70957.)

**NITROGEN, AMMONIA, TOTAL (MG/L AS NH4)
PARAMETER 71845 CONVERTED ALGORITHM**

(00610. * 1.2878)

**NITROGEN, AMMONIA, DISSOLVED (MG/L AS NH4)
PARAMETER 71846 CONVERTED ALGORITHM**

(00608. * 1.2878)

**NITROGEN, NITRATE, DISSOLVED (MG/L AS NO3)
PARAMETER 71851 CONVERTED ALGORITHM**

NEGATIVES ARE ELIMINATED BY TAKING THE MAX USING ZERO ON THE LEFT

((631. -613.)* 4.4266)

**NITROGEN, NITRITE, DISSOLVED (MG/L AS NO2)
PARAMETER 71856 CONVERTED ALGORITHM**

(613. * 3.28619957)

**NITROGEN, TOTAL (MG/L AS NO3)
PARAMETER 71887 CONVERTED ALGORITHM**

NEGATIVES ARE ELIMINATED BY TAKING THE MAX USING ZERO ON THE LEFT

((625. +630.)* 4.4266)

**SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY)
PARAMETER 80155 CONVERTED ALGORITHM**

((80154. *(61. !60.))* 0.0027)

**SEDIMENT DISCHARGE, TOTAL, SUSPENDED PLUS BED MATERIAL (TONS/DAY)
PARAMETER 80156 CONVERTED ALGORITHM**

((80180. *(61. !60.))* 0.0027)

**DEPTH BELOW LAND SURFACE DATUM (WATER LEVEL) METERS
PARAMETER 99019 CONVERTED ALGORITHM**

(72019. * .304799974)

**ELEVATION, IN METERS ABOVE NGVD
PARAMETER 99020 CONVERTED ALGORITHM**

(72020. * .304799974)

DISCHARGE, IN CUBIC METERS PER SECOND
PARAMETER 99060 CONVERTED ALGORITHM

(60. * 0.02832)

DISCHARGE, INSTANTANEOUS, IN CUBIC METERS PER SECOND
PARAMETER 99061 CONVERTED ALGORITHM

(61. * .02832)

GAGE HEIGHT, METERS ABOVE DATUM
PARAMETER 99065 CONVERTED ALGORITHM

(65. * .304799974)

Table 27 is a list of parameters needed or that will be used in calculating values for certain parameters.

Table 27. Parameters needed or used in calculating values for certain parameters

Calculated Parameters	Parameters Required for Calculation	Parameters Used in Calculation, if Present
00301	00300 00025 00010 00095	
00435	71825	
00540	00530 00535	
00600	00625 00630	
00602	00623 00631	
00605	00625 00610	
00607	00623 00608	
00618	00631 00613	
00620	00630 00615	
00621	00633 00616	
00650	70507	
00660	00671	
00669	00678 70507	
00670	00665 00678 or (70507 + 00669)	
00672	00677 00671	
00673	00666 00677 or (00672 + 00671)	
00687	00693 00686	
00690	00685 00680	
00900	00915 00925	01005 01080
00902	00916 or 00918 00927 or 00921 (00450 or 00440 or 99440) + (00447 or 00445 or 99445) or (00419 or 00410 or 29813 or 99430 or 00431)	01082 or 01084 01007 or 01009

Table 27. Parameters needed or used in calculating values for certain parameters--Continued

Calculated Parameters	Parameters Required for Calculation	Parameters Used in Calculation, if Present
00903	00916 or 00918 00927 or 00921 (00449 or 00451 or 90440 or 95440) + (00446 or 00448 or 90445 or 95445) or (00416 or 00417 or 00413 or 00418 or 00421 or 90410 or 90430 or 95410 or 95430)	01082 or 01084 01007 or 01009
00904	00915 00925 (00453 or 29804) + (00452 or 29807) or (39086 or 39036 or 29802)	01080 01005
00905	00915 00925 (29086 or 29805) + (29809 or 29808) or (39087 or 29801 or 29803)	01005
00931	00930 00915 00925	
00932	00930 00915 00925 00935	
30207	00065	
30208	00060	
30209	00061	
30210	72019	
30211	72020	
70301	(99440 or 00440 or 90440 or 95440 or 00450 or 00453 or 29804) or (00410 or 90410 or 00419 or 29802 or 29813 or 39086 or 39036 or 99430 or 00431) 00915 00925 00930 00940 00945 00935	99445 00445 90445 95445 00447 00452 29807 00955 00631 or 00618 + 00613 00608 71870

Table 27. Parameters needed or used in calculating values for certain parameters--Continued

Calculated Parameters	Parameters Required for Calculation	Parameters Used in Calculation, if Present
70301 (continued)		00746 00723 71830 71865 00950 00671 01000 01005 01010 01020 01025 01030 01035 01040 01046 01049 01056 01060 01065 01075 01080 01085 01090 01100 01106 01120 01125 01130 01135 01145 01150 01160 71890
70302	70300 or 70301 (see above)	
70303	70300 or 70301 (see above)	
70949	81354 81353 70953	
70950	00573 00572 70957	
71845	00610	
71846	00608	

Table 27. Parameters needed or used in calculating values for certain parameters--Continued

Calculated Parameters	Parameters Required for Calculation	Parameters Used in Calculation, if Present
71851	00631 00613	
71856	00613	
71887	00625 00630	
80155	80154 00061 or 00060	
80156	80180 00061 or 00060	
99019	72019	
99020	72020	
99060	00060	
99061	00061	
99065	00065	

Appendix E. Algorithms for Calculated Parameters

Appendix F. Menus

qwmenu

```
QW DATA PROCESSING ROUTINE    REV NWIS(version no.)+YYYYMMDD
YOU ARE USING WATER-QUALITY DATABASE NUMBER 01

1 -- ENTRY AND EDIT OF DATA
2 -- RETRIEVAL AND OUTPUT OF DATA
3 -- APPLICATIONS
4 -- UTILITIES
5 -- SUPPORT
99 -- EXIT TO SYSTEM
```

Please enter a number from the above list or a UNIX command:

Figure 14. Menu displayed when entering the command qwmenu

Selecting Option 1 displays the following menu:

```
QW DATA PROCESSING ROUTINE    REV NWIS(version no.)+YYYYMMDD
YOU ARE USING WATER-QUALITY DATABASE NUMBER 01

ENTRY AND EDIT OPTIONS

1 -- LOGIN SAMPLES          5 -- ADD/UPDATE SITES
                                IN THE SITE FILE
2 -- ENTER FIELD DATA       98 -- EXIT TO MAIN MENU
3 -- ENTER MISC. DATA        99 -- EXIT TO SYSTEM
4 -- EDIT SAMPLE RECORDS
```

Please enter a number from the above list or a UNIX command:

Figure 15. Menu displayed when selecting Option 1 (entry and edit) from qwmenu

Selecting Option 2 displays the following menu:

```

QW DATA PROCESSING ROUTINE    REV NWIS(version no.)+YYYYMMDD
YOU ARE USING WATER-QUALITY DATABASE NUMBER 01

RETRIEVE SAMPLES OPTIONS

1 -- CHECK QW DATA ENTRY          6 -- MAKE WATER-QUALITY TABLES
2 -- MAKE LOG LIST OF QW         7 -- LOCATE SITES AND/OR SAMPLES
      RECORD HEADER INFORMATION   FROM TWO DATABASES
3 -- LOCATE SITES AND/OR        8 -- MAKE WATER-QUALITY TABLES
      SAMPLES                      OF SAMPLES FROM TWO DATABASES
4 -- PRODUCE 1 AND * CARD        98 -- EXIT TO MAIN MENU
      OUTPUT
5 -- MAKE A PSTAT DATA SET       99 -- EXIT TO SYSTEM

Please enter a number from the above list or a UNIX command:

```

Figure 16. Menu displayed when selecting Option 2 (retrieve samples) from qwmenu**Selecting Option 3 displays the following menu:**

```

QW DATA PROCESSING ROUTINE    REV NWIS(version no.)+YYYYMMDD
YOU ARE USING WATER-QUALITY DATABASE NUMBER 01

QW APPLICATION PROGRAMS

1 -- PRODUCE FLAT FILE OUTPUT    6 -- RUN QWVALID TO CHECK DATA
2 -- FLAT FILE OUTPUT WITH METHOD 7 -- PLOT ROUTINES
3 -- SUMMARY STATISTICS TABLE    8 -- DATAGRAF
      (PERCENTILES)
4 -- DETECTION LIMITS TABLE      98 -- EXIT TO MAIN MENU
5 -- PROVIDE CATION-ANION        99 -- EXIT TO SYSTEM
      BALANCE

Please enter a number from the above list or a UNIX command:

```

Figure 17. Menu displayed when selecting Option 3 (applications) from qwmenu

Selecting Option 7 from the Applications Menu displays the following menu:

```

QW GRAPHIC ROUTINES    REV NWIS(version no.)+YYYYMMDD
YOU ARE USING WATER-QUALITY DATABASE NUMBER 01

GRAPHIC OPTIONS

1 -- CREATE AN X,Y PLOT          6 -- CREATE REGRESSION PLOTS
2 -- CREATE BOXPLOTS            7 -- CREATE FLATFILE OUTPUT
3 -- CREATE A STIFF DIAGRAM      8 -- SUMMARY STAT. TABLE (PERCENTILES)
4 -- CREATE A PIPER DIAGRAM       9 -- DETECTION LIMITS TABLE
5 -- TIME SERIES PLOTS          10 -- STATISTICS PLOTS
98 -- EXIT TO APPLICATIONS MENU 99 -- EXIT TO SYSTEM

Please enter a number from the above list or a UNIX command:

```

Figure 18. Menu displayed when selecting Option 7 (graphics) from Applications menu**Selecting Option 4 from the Main Menu displays the following menu:**

```

QW DATA PROCESSING ROUTINE    REV NWIS(version no.)+YYYYMMDD
YOU ARE USING WATER-QUALITY DATABASE NUMBER 01

WATER-QUALITY UTILITIES OPTIONS

1 -- CHANGE DEFAULT DATABASE NUMBER
2 -- COUNT QW RECORDS
3 -- FLAG APPROVED SAMPLES

98 -- EXIT TO MAIN MENU
99 -- EXIT TO SYSTEM

Please enter a number from the above list or a UNIX command:

```

Figure 19. Menu displayed when selecting Option 4 (utilities) from qwmenu

Selecting Option 5 displays the following menu:

```

QW DATA PROCESSING ROUTINE    REV NWIS(version no.)+YYYYMMDD
YOU ARE USING WATER-QUALITY DATABASE NUMBER 01

CHECK SUPPORT FILES OPTIONS

1 -- LIST SITE RECORDS      5 -- CHECK FIPS CODE FILE
2 -- CHECK PARAMETER        6 -- LIST STATE/COUNTY DATA
    CODE DICTIONARY
3 -- LIST PARAMETER        7 -- DUMP PARAMETER CODE DICTIONARY
    CODE DICTIONARY          WITH PRECISION CODES
4 -- CHECK GEOLOGIC         8 -- DISPLAY CONTENTS OF
    UNIT CODE FILE           ALGORITHM FILE
98 -- EXIT TO MAIN MENU     99 -- EXIT TO SYSTEM

```

Please enter a number from the above list or a UNIX command:

Figure 20. Menu displayed when selecting Option 5 (check support files) from qwmenu**qwdbamenu**

```

QW DATA PROCESSING ROUTINE    REV NWIS(version no.)+YYYYMMDD
YOU ARE USING WATER-QUALITY DATABASE NUMBER 01

WATER-QUALITY OPTIONS

1 -- PROCESS STORET UPDATES    7 -- RUN QWCARDSIN TO PROCESS
                                LOGGED IN SAMPLES
2 -- DELETE/CHANGE SITES       8 -- RUN QWENTER TO PROCESS
                                UNLOGGED IN SAMPLES
3 -- FLAG APPROVED SAMPLES     9 -- RUN QACARDSIN TO PROCESS LOGGED
                                IN SAMPLES FOR QAFILE
4 -- MPACK QW FILE OF         10 -- RUN QAENTER TO PROCESS UNLOGGED
    SELECTED DATABASE           IN SAMPLES FOR QAFILE
5 -- GET LAB DATA FROM        11 -- CHANGE DEFAULT DATABASE NUMBER
    CENTRAL LAB
6 -- RETRIEVE LABORATORY      99 -- EXIT TO SYSTEM
    DATA AND COST MENU

```

Please enter a number from the above list or a UNIX command:

Figure 21. Menu displayed when entering qwdbamenu command